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Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*
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QUEENSTOWN NORTH PROJECT
COMPRISING:
WALFORD PEAK EL 24/96
QUEENSTOWN EL 6/98
BEATRICE EL 20/98

ANNUAL REPORT
FOR THE PERIOD ENDING OCTOBER 1999

Volume 1 of 3

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1. SUMMARY

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A considerable amount of work has been completed on the Beatrice Prospect (EL 6/98), the Lake Dora-Lake Spicer area (EL 24/96) and the West Sedgwick area (EL 6/98) of the Queenstown Project during the reporting period. The majority of effort was at the Beatrice Prospect where the following work was completed:

- Relogging of previous drill holes
- 1:1000 scale and 1:5000 scale mapping, compilation and geochemical sampling.
- A 580 sample MMI soil sampling programme.
- A pole-dipole induced polarisation survey.
- An orientation CSAMT survey.
- 4 diamond drill holes for 2392.6m.
- Downhole EM on the four drill holes.

Results from the work at Beatrice have been encouraging with wide intervals of highly anomalous zinc intersected in two of the four holes drilled (best results of 0.8m @ 8.77% Zn, 2.15% Pb, 105 ppm Ag from 459.3-460.1m in MS10 and 68.4m @ 0.49% Zn, 0.21% Pb and 7.8 g/t Ag from 515m- 583.4m in MS8).

Previous exploration completed at West Sedgwick has been compiled and reviewed. This included relogging of seven diamond drill holes for 2156m. The key horizon at the top of the CVC (and/or basal Tyndall Group) is under-explored in this area particularly in areas of extensive glacial cover. An exploration programme is proposed to test this contact during year 2 of the licence.

The Lake Spicer - Lake Dora area has been mapped in detail. Significant results have been returned from rock-chip sampling of old workings (up to 3.85% Cu, 2.1% Pb, 9.65% Zn, 49 g/t Au, 250 g/t Ag, and 2.2% Co; from different samples), however, the style of mineralisation (narrow veins) is less encouraging.

2. INTRODUCTION

The Queenstown North Project covers an area extending from just north of Queenstown to Mt Selina (Figure 1). The project was formed by the amalgamation of reporting and expenditure commitments for EL 24/96 Walford Peak, EL 6/98 Queenstown and EL 20/98 Lake Beatrice (Figure 2).

Work completed during the year has concentrated on three main areas; the Beatrice Prospect, the Lake Dora-Lake Spicer area and the West Sedgwick area.

The majority of effort was at the Beatrice Prospect where the following work was completed:

- Relogging of previous drill holes (1736m) and re-assaying of some core.
- 1:1000 scale and 1:5000 scale mapping, compilation and geochemical sampling.
- A 580 sample MMI soil sampling programme.
- A pole-dipole induced polarisation survey.
- An orientation CSAMT survey.
- 4 diamond drill holes for 2392.6m.
- Downhole EM on the four drill holes.

The Lake Spicer - Lake Dora area has been mapped in detail and some rockchips were collected during this exercise.

The previous exploration completed at West Sedgwick has been compiled and reviewed. This included relogging of seven diamond drill holes for 2156m. An exploration program has been proposed as a result of this review and this will commence in year 2 of the licence.

3. LAND TENURE

The Queenstown North Project comprises EL 24/96 Walford Peak, EL 6/98 Queenstown and EL 20/98 Lake Beatrice (Table 1). Permission for joint expenditure and technical reporting on these licences was granted on the 23rd March 1999.

EL 6/98 Queenstown comprises two blocks; the southern block is contiguous with EL 20/98, however, the northern Moxon Saddle block is isolated and abuts Pasminco's Tullah EL (22/90). Joint reporting for the Moxon Saddle block of EL 6/98 and the Tullah EL was approved in February 1998 and the reader is referred to the Tullah (EL 22/90) annual reports for results from this area.

It has been requested that two additional licences (EL 10/99 and 13/99; granted during 1999) be included in the project, for combined reporting and expenditure commitments, however, at the time of writing this has not been approved. No significant work was done on these two licences during the reporting period.

Table 1. Queenstown North Project; constituent Tenements.

Licence Number	Licence name	Date Granted	Area (Sq km)
EL 24/96	Walford Peak	26th November 1996	44
EL 6/98	Queenstown	30th January 1998	33
EL 20/98	Lake Beatrice	4th November 1998	10.47
EL 10/99	Lake Margaret	27th July 1999	5
EL 13/99	Linda	12th July 1999	6.5

4. REGIONAL GEOLOGY

Three VHMS prospective geological environments occur around a core of Owen Conglomerate forming the West Coast Range in the area covered by the Queenstown North Project (Figure 3; derived from the published 1:25,000 scale government geology maps). These environments are the Walford Peak area on the eastern flank of the range, the West Sedgwick area on the western flank of the range and the Beatrice area on the northern flanks of the Comstock Valley that cuts through the range.

Walford Peak

The Regional Geology of this area has been described in detail by Weber et al.,. (1997). The eastern edge of the Walford Peak area comprises Precambrian Tyennan basement, a metamorphic terrain described as mainly lower greenschist facies phyllites and quartzites. This basement is unconformably overlain by elements of the Cambrian Mt Read Belt comprising the Sticht Range Beds and correlates of the Tyndall Group. To the west, and overlying the Tyndall Group correlates, are the siliciclastic Cambro-Ordovician Owen Conglomerates. The contact between the Tyndall Group and Owen Conglomerate is variable and may be conformable and gradational, unconformable or faulted.

The middle Cambrian Sticht Range Beds comprise sediments from pebble-cobble conglomerates to siltstones and minor black shales (with a largely metasedimentary provenance) and minor volcaniclastic units. There is an apparent gradational relationship between the Sticht Range Beds and the overlying Tyndall Group.

The Tyndall Group comprises a volcanic conglomerate unit (the Dora and Selina conglomerates) underlain by quartz phyric lavas, intrusives and volcaniclastics. In the northern part of the area the Tyndall Group volcanics are intruded by the Murchison granite, a Cambrian intrusive complex about 7.5 km long and 3 km wide.

West Sedgwick

The western part of the West Sedgwick area is dominated by mixed volcaniclastics and sediments of the Yolande River sequence that have been intruded by felsic-mafic porphyries. The eastern part of the area is dominated by feldspar±hornblende-phyric volcanics of the Central Volcanic Complex. The volcanics contain dacitic lavas and volcaniclastics typical of the Central Volcanic Complex and also contains abundant variably magnetic, andesitic (feldspar-hornblende-phyric) hyaloclastite lavas and subvolcanic intrusions. The andesitic volcanics are similar to the Anthony Road Andesite occurring 10 km to the north. Several black shale horizons occur within this package and these have generated good IP anomalies.

The Central Volcanic Complex is overlain by Tyndall Group rocks at Zig Zag Hill and also 8 km north in the Basin Lake area. It is probable that there is a continuous thin sliver of Tyndall

Group between the top of the Central Volcanic Complex and the Great Lyell Fault for the length of the contact, although this contact is partly obscured by glacial deposits of variable thickness, see below. To the east of the Great Lyell Fault (GLF) the Owen Conglomerate is exposed. In the Zig Zag Hill area there are some structural complexities associated with the north-south Great Lyell Fault and east-west cross structures.

In the northern part of the West Sedgwick the Cambrian geology is obscured by glacial deposits. The glacial deposits are dominated by two major moraines. The largest is the 1.3 km long Hamilton Moraine, the second moraine occurs on the 800m long east-west ridge south of the Lake Margaret pipeline.

Beatrice

The geology of the Beatrice area has been described in detail by Boyd (1994). The Beatrice area lies on the steep southern slopes of Mt Sedgwick where the prospective volcanics are exposed in a window through the Owen Conglomerate formed by the valleys of Itat and Porphyry Creeks. Lavas, volcaniclastics and a black shale unit striking N-S are interpreted on published maps (Corbett and Jackson, 1987) as being CVC correlates. A large quartz feldspar porphyry sill (or series of sills) intrudes these rocks. These units are unconformably overlain by volcanic sandstones and conglomerates of the Tyndall Group and the Cambro-Ordovician Owen Conglomerate.

The top of Mt Sedgwick is columnar jointed Jurassic Dolerite interpreted as a remnant of a dolerite sheet (The lack of a strong magnetic signature suggests it is not a plug) that intrudes Permian tillite, which is exposed on the SE flank of the Mountain.

5. PREVIOUS EXPLORATION

5.1 Beatrice Prospect

Work has been completed at the Beatrice Prospect by The Mt Lyell Mining and Railway Company, Goldfields, BHP and RGC in the twenty three years since discovery of the prospect.

Mount Lyell Mining and Railway Company:

1975: The first mention of the Beatrice Prospect is in the **1976** Mt Lyell Mining and Railway Company (MLMRC) Annual Report (Brophy, 1976) where stream sediment sampling and follow-up mapping and sampling in the Itat Creek area is reported.

Stream sediment samples SS43 and SS44 collected in Itat Creek assayed 1110 ppm Pb and 1130 ppm Zn and 906 ppm Pb and 780 ppm Zn respectively. One rock chip sample of black shale assayed 375 ppm Cu, 1300 ppm Pb and 3,000 ppm Zn.

1976: During the 1976/77 field season exploration by MLMRC centred on the Beatrice Prospect (Walter, 1977). 43.5 kilometres of grids were cut, the grid was mapped, 'C' horizon soil samples collected at 30m spacings and a gradient array IP survey was completed over 38 line kilometres of the grid. In January 1976 MLMRC joint ventured EL 10/69 with Getty Oil Development Company Ltd (GODL).

1977: During 1977/78 (Hutton, 1978) an extra 4 kilometres of lines were cut. The western part of the grid (lines 00N-1600N, from their western ends to approximately 400m east of Itat Creek) were -80# soil sampled and assayed for Cu, Pb, Zn, Ag and Mn. The sampling interval was 30m with intermediate 15m sampling over IP anomalies.

A major geochemical anomaly was detected between lines 08N and 16N (open to the north) that corresponded with a SW trending black shale unit and altered tuff. Best values were 510ppm Cu, 1.1% Pb, 1900 ppm Zn, 6 ppm Ag and very high Mn (up to 15.5%).

1978: During **1978-79** the above mentioned geochemistry anomaly became known as the Mt Sedgwick Anomaly Zone (MSAZ) and the entire gridded area was referred to as the Beatrice grid (Hutton, in Reid et.al 1979).

An access track was excavated into the prospect with both a western track, which required blasting (near MS-3) and an eastern track. Mineralisation was recognised in both these roads. This western track was rock chipped at 5m sampling intervals.

The entire 80m assayed 80m @ 0.34% Zn, 0.22% Pb, 65 ppm Cu and 3.7 ppm Ag. The best interval assayed 5m @ 0.57% Zn, 0.63% Pb 90 ppm Cu and 9 ppm Ag. Eleven samples were collected from the eastern road. These samples averaged 1.60% Zn, 1.28% Pb, 250 ppm Cu and 6 ppm Ag. Hutton (in Reid et.al., 1979) states that these results are not representative of the entire section and that if this section was sampled methodically similar results to the western road would be achieved.

Lines 1800 and 2000N were soil sampled and the MSAZ was shown to continue giving it a strike length of +1200m and a maximum width of about 300m. By line 2000N the Zn anomaly appears to be petering out whereas the Pb anomaly is still wide and strongly anomalous.

109 rock chips were collected and assayed for Cu, Pb, Zn, Ag, Mn, ± S, Au, Fe, Co. Only eight samples were analysed for gold and these all assayed <0.9 g/t Au. Best base metal results were:
9% Zn, 0.19% Pb, 0.07% Cu and 7 g/t Ag and
1.9% Zn, 5.7% Pb, 0.025% Cu, 12 g/t Ag and 0.5 g/t Au.

Three diamond drill holes, designed to test the MSAZ between 1400 and 1600N, were completed by Associated Diamond Drilling. DDH MS1 (329.1m) was drilled from east to west and intersected 7m @ 1.1% Pb, 1.7% Zn, 7 ppm Ag, 0.3 ppm Au from 62-69m and 2m @ 0.14% Cu, 2.7% Pb, 5.1% Zn and 22 ppm Ag from 111-113m. Bedding is steeply west dipping and this hole therefore largely drilled down bedding. DDH MS2 (301m) was drilled from west to east and only intersected low grade mineralisation; the best intersection being 17.25m @ 0.3% Pb, 0.54% Zn and 5 ppm Ag from 62-79.25m. DDH MS3 (328m) was drilled to test beneath the good rock chip results from the western and eastern access tracks. The best intersections were 7m @ 0.4% Pb, 0.58% Zn and 4.5 ppm Ag from 111.6-118.6m and 15m @ 0.4% Pb, 0.6% Zn and 4 ppm Ag from 170-185m.

The following geophysical surveys were completed by Scintrex: EIP gradient array, Downhole three-array, Schlumberger Array, Dipole-dipole and pole-dipole surveys.

1979: During 1978-79 (Meares, 1980) drill holes MS4 and MS5 were completed and 1065 soil samples were collected.

DDH MS 4 (350m) was collared to test northern extensions to mineralisation encountered in MS 1 and in the road exposures. Assay results were disappointing with a best result of 6m @ 0.3% Pb, 0.7% Zn, 2.7 ppm Ag and 0.3 ppm Au from 144-150 meters. The hole was drilled to the west and, as with MS 1, it largely drilled down bedding.

Drill hole MS 5 was drilled to determine the cause of a chargeability anomaly associated with the quartz-feldspar porphyry. This hole intersected black shales at 39.6-62.4 and 105.8-139 meters. The black shales were interpreted to explain the IP anomaly and the hole was terminated. No significant mineralisation was intersected.

The eastern portion of the grid was soil sampled (east of 386000 mE) with 1065 C horizon -80# soil samples. Samples were collected at 30m centres.

Geophysical surveys carried out on the grid during the 1978-79 field season included; Ground magnetics, Gradient array IP, Pole -dipole IP and Dipole-dipole IP.

Goldfields

1983: There was no further work done at Beatrice until 1983 when Goldfields Exploration (the exploration division of RGC and MLMRC) was required to relinquish 50% of EL 9/66. To aid this a geological review of the ground was completed (Purvis, et.al 1983). Major conclusions were that the geology at Beatrice was regarded as being similar to Red Hills and that previous drilling was not an adequate test of the MSAZ, as holes were drilled at a low angle to dip and strike (MS 1 and MS 4) or were collared underneath the shales (MS2 and MS3). Although these comments are not disputed the four holes are a reasonable test of the soil anomaly and wisdom in hindsight is always very easy.

The review team recognised two areas of potential for mineralisation:
1. Steeply dipping mineralised shale in Itat Creek,
2. Extensions of the shale and ashes-shales-ignimbrites underlying the Mt Sedgwick Porphyry to the East and West of Itat Creek.

15 rock chip samples were collected by the review team, three of these assayed >1000 ppm Zn and > 400 ppm Pb, however, all samples were below detection in gold. The validity of the original gold assays were strongly queried (note: Goldfields base metal assays also appear to be low for the Beatrice Prospect and recent work (section 6.1.2) shows unequivocally that the basemetal mineralisation may be Au-rich). No further work was done on the Beatrice Prospect and the ground containing the prospect was relinquished in by MLMRC in 1987; the area was picked up by BHP as part of EL 103/87.

BHP

1989: The Beatrice Prospect remained unexplored until 1989. BHP remapped the area, relogged drill holes MS1-MS5 and conducted a four loop UTEM survey (Wilde and Kerr 1990). No strong conductors were associated with the base metal mineralised zone on the Beatrice grid and only poorly conducting features, related

to structures or lithologics, were recognised. In 1991 RGC Exploration joint ventured into the property with BHP.

RGC

1994: In 1994 the prospect was revisited by RGC Exploration (Boyd, 1994). A literature review was completed, the grid was remapped in detail and drill core was relogged. The main aim of the remapping was to determine if the black shale continued south past the limit of previous drilling. This aim is rather peculiar as it had been determined in 1978 that the black shales continued south of the known mineralisation (Reid et al., 1979). This remapping of the grid was very extensive but unfortunately the interpretation was not very rigorous. After relogging the core Boyd makes the ambitious statement "These holes have thoroughly tested the possible geological, geophysical and geochemical targets identified by the first exploration work done at Beatrice" (Boyd, 1994).

Boyd stated that "the sulfide exposed in the core is bedded within the black shale and volcaniclastic units and as such is most likely to be syn-sedimentary, thus indicating that some form of seafloor sulfide deposit has occurred at this stratigraphic level". The stratigraphic position hosting the mineralisation was shown to extend 300m to the south and a drill hole was proposed to test this position. This hole was not drilled until 1996 (see below).

Boyd (1994) did a statistical and lithological appraisal of mineralisation in rock chips and concludes that the majority of the mineralisation is within the black shales. An average of 1.62% Zn, 1.79% Pb, 620 ppm Cu and 45 ppm Ag is calculated for black shale, an average of 2.52% Zn, 0.11% Pb, 365 ppm Cu and 4 ppm Ag is calculated for bedded vitric tuff and an average of 0.34% Zn, 0.22% Pb, 65 ppm Cu and 3.7 ppm Ag is calculated for the rest. Samples were collected for sulfur isotope analysis from the drill hole MS1. $\delta^{34}S$ values for galena, sphalerite and pyrite are +15.8 - +14.9 ‰. These values are similar to the isotopic values for sulfur from the top of the Rosebery deposit ($\delta^{34}S$ +13.2 - +15.6 ‰). No lead isotope data has been collected at the prospect.

1996: In 1996 minor mapping and one diamond drillhole (MS6; 288.8m) were completed (Joyce, et.al 1997). DDH MS6 was drilled to test the black shale horizon 500m to the south of existing drilling and adjacent the Comstock Valley Fault (approximately 500m north of this structure) which was interpreted as a synvolcanic shear. No significant mineralisation was intersected, with a best assay of 2.6m @ 0.25% Zn. RGC Exploration relinquished the area in October 1997 and it was successfully tendered for by Pasminco Exploration.

5.2 West Sedgwick Prospect

The West Sedgwick area covers the western and southwestern flanks of Sedgwick Bluff (not Mt Sedgwick itself). The first exploration in the area was in 1957 when Rio Tinto Australian Exploration (RTAE) completed a TEM survey. Since this time the area has been explored by Mount Lyell Mining and Railway Company (MLMRC), Pickand Mathers and Co. International (PMI), Goldfields Exploration, BHP and RGC Exploration.

The majority of previous work has concentrated at the top of the Central Volcanic Complex around the southern end of Sedgwick Bluff, in the vicinity of Zig Zag Hill, where there are several east-west cross structures. This stratigraphy probably continues to the north but exploration efforts have been hampered by scree and glacial moraine cover.

Rio Tinto

Rio Tinto Australian Exploration (Muceniekas, 1958) completed a EM survey and a 600m long weak anomaly centre at roughly 46900 mN, 81800 mE was identified (Zig Zag Hill anomaly). To follow up the anomaly detailed geological mapping, stream and soil geochemistry, ground magnetics and a gravity survey were completed. Minor outcrop revealed that the alteration was similar, but weaker, to the Mt Lyell field. A weak Pb in soil anomaly coincides with the EM anomaly. No further work was done until 1962 when RTAE (in joint venture with EZ Co) completed a three electrode array IP survey along 6 grid lines. There was no IP response associated with the EM anomaly and no further work was completed.

Pickand Mather and Co International (PMI)

PMI pegged the ground in 1965 as part of EL 12/65. They completed reconnaissance geology, stream sediment geochemistry and by 1967 their exploration efforts had focussed on the volcanic-conglomerate contact. A dipole-dipole survey was completed and an anomaly was identified close to the Zig Zag Hill anomaly, but, PMI concentrated their efforts on a larger anomaly located at Basin Lake (outside the current tenement). No further work was done on the area until MLMRC pegged the ground in 1971.

Mount Lyell Mining and Railway Company (MLMRC)

MLMRC held this round under EL 41/71. In their first report they make the comment *"Pickand Mathers exploration philosophy appears to have been based on the often stated, but invalid, premise that the Lyell orebodies are related genetically to the volcanic-conglomerate contact"*. Their exploration focussed to the west mainly within the Yolande River Sequence. An extensive grid (East-west lines on 070° and spaced at 600'), was cut and was labelled with the MLMRC trademark Northing and Southing. From 1971-1973 exploration concentrated on

mapping (Sheppard, 1972 and 1974), much of which was grid based, and the presence of the Tyndall Group (Dora Conglomerate) was first recognised. In 1973 the Lake Margaret Tram Pyrite Lens, a 10 foot wide zone of pyrite (30%) and quartz (70%) containing up to 1g/t Au, Ag to 1 g/t, Cu to 1020 ppm and very low Pb and Zn, was discovered. In the same year an IP survey was completed by Scintrex; a total of 38 anomalies were defined of which four were regarded as significant (Sheppard, 1975).

During 1974 (Sheppard, 1975) the grid was extended and soil samples were collected over the 38 anomalies at 50' centres and at 25' centres over the four major anomalies. In 1975 (Brophy and Stevens-Hoare, 1976) and 1976 (Meares, 1977) some additional grid extensions were cut and a blanket gradient array IP survey and a smaller pole-dipole survey were completed. These surveys located a 150' wide, 2000' long black shale horizon on the east flanks of Crown Hill. The Lake Margaret Tramway pyrite lens had no IP response.

During 1977 three diamond drill holes were drilled to test the Lake Margaret Tramway pyrite lens and a combined IP/geochemical anomaly on line 84S (Meares, 1978). This drilling was completed during June-September 1977 and was reported in an Appendix to the 1977 report (Meares, 1977).

DDH WS1 and WS2 tested the Lake Margaret tramway pyrite body and were collared at approximately 5345500 mN, 379200m. Hole WS1 was abandoned at 92 metres due to drilling problems. Six samples of the black shale and 36 samples of the tuff from hole WS2 (224.4m) were assayed for Cu, Pb, Zn; All results were very low. DDH WS3 (259.7m) was targeted at an area combined chargeability and Pb in soil anomaly within black shales. It was collared at approximately 5346400 mN, 380200m. Five samples were collected of the black shale unit and 12 samples of the volcanics. The black shale was anomalous in Pb (range 420-760, average 572 ppm) and Zn (range 185-1100, average 512 ppm).

In 1980-81 Mt Lyell cut an extensive grid over the Comstock Valley and completed an IP survey. Some of these lines extended across the CVC-Owen Conglomerate contact north of Zig Zag Hill. No significant chargeability anomalies were identified in the West Sedgwick area.

The review of EL 9/66 (Purvis et al., 1983) highlighted the area of the old RTAE EM anomaly as being prospective. No action was taken on this recommendation until 1985 (FitzGerald and Cartwright, 1986) when anomaly was followed-up with three lines of SIROTEM. A weak WNW anomaly parallel to the RTAE anomaly was identified and was interpreted to be a weakly conductive zone. This anomaly occurred in an area of Owen Conglomerate scree and it was tested by the drilling of WS4 (229.8m) which failed to intersect any significant mineralisation (Fitzgerald, 1987).

BHP

The tenement was relinquished by Goldfields and pegged as EL 102/87 by BHP (Kerr and Wilde, 1989). They relocated all the previous grid data and quite unbelievably there are four grids in the West Sedgwick area and even more unbelievably they are all at different orientations (see Figure 2 from Kerr and Wilde 1989). These are the West Sedgwick grid, North Queen Grid, Mine lease AMG grid and the Comstock AMG grid.

The BHP approach was to cover areas with blanket UTEM. They cut an additional 106.7 kilometres of lines and fortunately they did not choose a fifth grid orientation. A UTEM survey was completed by Lamontagne Geophysics, and results are reported in Kerr and Wilde (1990). An early time feature in these data corresponds to the GLF. Another well defined early time anomaly extends NW from 5346000 mN, 380700 mE, to 5346800 mN, 380225 mE. This feature corresponds with the anomalous Pb/Zn soils tested by WS3. No other major anomalies were identified.

BHP also revisited the Tramway pyrite zone. The zone was described by Sheppard (1972) as a pyrite outcrop but is a pyritic quartz sericite schist. The zone is two metres wide and probably <30m strike length. Rock chips return up to 0.76 g/t Au. The drillhole that tests this zone, WS2 was not analysed for Au. MLMRC only collected six samples from the shale in WS2 and had a best result of 1.5m @ 93 ppm Cu 420 ppm Pb. BHP cut some additional samples from the shale and report a best assay of 1.4% combined Pb/Zn. BHP joint ventured EL 102/87 with RGC Exploration in November 1991.

RGC Exploration

RGC Exploration's exploration strategy was to use mapping and geochemistry, in contrast to BHP Exploration's blanket UTEM. Their work concentrated on the SW corner of Mt Sedgwick. During 1991/92 the West Sedgwick area was mapped at 1:5000 scale, 139 rock chip samples were collected and C-horizon soil samples were collected (Halley, 1992).

During 1992/93 the core from WS4 was re-logged. It was recognised that the hole did not go through the andesite (that occurs at the top of the CVC) and the grey carbonate that was intersected from 209.1m - 210.8m was interpreted as a low temperature exhalite (Halley, 1993). WS5 was then drilled to test the volcanics near the intersection of the West Sedgwick and Great Lyell Faults. It was originally planned to lengthen WS4 however the PVC could not be removed from the hole and a new hole was collared. WS5 was abandoned at 97.9m due to the rod string

breaking and WS5A was lipped of WS5 at 52m. WS5A intersected a major fault at 124m in which the hole was abandoned.

WS6 was completed at 380.8m and intersected a sequence of coarse grained hornblende-phyric andesites to 219.6m with major faults at 121.9-123.4 and 212.6-219.6m. Beyond the second fault the Tyndall Group was intersected and was represented by a sequence of interbedded siltstones and felsic epiclastics followed by the Comstock Tuff. The Great Lyell fault was intersected at 373.0m. Core was analysed for Au, Ag, Cu Pb and Zn, but, there were no significant assay results.

During 1993-94 a series of 400m spaced holes were drilled to test the CVC-Tyndall Group contact close to the GLF. Two holes were drilled from the Mt Lyell Mine lease and WS7 was drilled from the saddle between Agglomerate Hill and Zig Zag Hill. WS7 (499.2m) intersected the CVC-Tyndall Group contact but this was unmineralised. Zones of silica-sericite-pyrite alteration were intersected from 45 to 155m and from 295 to 350m. Ninety three samples were submitted for assay (including 36, 10m core grind composite samples and 57, 1m intervals of ½ core). Assay results were disappointing with no base metals above 1000 ppm (Halley 1994). Two samples from WS7 were submitted for whole rock ^{18}O analysis and three pyrite samples from the alteration zones were submitted for $\delta\ ^{34}S$ analysis. The whole rock ^{18}O results indicated that the alteration was formed by fluids at around 200^{0}C, which is to cool to carry significant base metals. The $\delta\ ^{34}S$ results indicated that the sulfides were formed from sulfate reduction and that the alteration is on the edge of a large system (the Mt Lyell system?). The only other recorded highly enriched ^{34}S and high ^{18}O from the MRV is in the stringer envelope zone at Hellyer (Halley, 1994).

Downhole SIROTEM was completed in WS6 and WS7 and Crone 3-component pulse EM was read in WS7; No offhole conductors were identified.

During 1994-95 hole WS8 was drilled from the same site as WS7 and was designed to test the bedded pyrite unit and pyrite alteration zone intersected in hole WS7 at 200m down dip (Halley et.al 1995). This hole was drilled to 652.1m, but, failed to intersect the sulfides seen in WS7. WS8 also failed to intersect the Tyndall Group; this was explained by RGC with an oddly located flat fault, however, on relogging the hole it is apparent that much of WS8 was drilled down bedding. No further work was completed at West Sedgwick.

5.3 Walford Peak

For a comprehensive review of previous exploration in the Walford Peak area the reader is referred to Weber, Murphy and Aliano (1997). Recent exploration has focussed on the Dora Prospect and previous work over this area is summarised below.

Dora Prospect

Considerable prospecting was done in the Dora-Spicer area in 1896-1899, during the Copper boom, with the establishment of many small workings. None of these yielded either the hoped for grades and tonnages and the field was abandoned by 1909 (Harcourt Smith, 1898; Blake and Henderson, 1939).

Modern exploration began around the old copper workings in the area in 1969. Mt Lyell Mining and its successor Goldfields, held the area as part of EL 9/66. As part of a regional exploration effort, the volcanic belt stretching from Lake Dora to the Selina area was gridded, mapped, soil and rock chip sampled (Newnham, 1970; Meares et al., 1982). Geophysical surveys included pole-dipole IP, SP, fluxgate magnetics and EM. In 1983, following a data review, Gold Fields collected some dump samples (Purvis et al., 1983) and in 1985 they relinquished the area.

CRAE took up the area as part of EL 5/85. Attracted by the Goldfields best dump assay of 2.0g/t Au, CRAE conducted a stream sediment, rock chip and dump sampling programme aimed at ascertaining the gold potential of the area (Funnell, 1987). Gold assays from dump sampling were in the 0.1g/t range, with a best 0.37g/t Au. CRAE also conducted a UTEM survey to search for massive sulphides which might not have been apparent in the IP results due to the highly variable chargeability response of the area (Funnell, 1987).

Aberfoyle took over management of EL 5/85 in 1988. Their work comprised field checking of earlier mapping, some further petrology and dump sampling, which returned a best result of 0.15g/t Au with 0.42% Cu (Lewis, 1994).

It should be noted that the southern part of the Dora Prospect was not part of this modern exploration effort. The Goldfields grid only extended south to the northern part of Lake Dora, and their maps indicate the southernmost part of the old mineral field was held under mining lease at the time of their exploration. Similarly, EL 5/85 only extended south as far as AMG 5354000N. Old workings extend for 1km to the south from 5354000N, and most of the interesting aeromagnetic and gravity anomalies lie in this southernmost area.

6. WORK COMPLETED

6.1 Beatrice Prospect

The majority of effort was at the Beatrice Prospect where the following work was completed:

- Detailed 1:1000 scale mapping.
- Compilation of previous mapping.
- Relogging of the six old holes (MS1-MS6).
- A 580 sample MMI soil sampling programme.
- A 4 line 8.8 km pole-dipole induced polarisation survey.
- An orientation 2 line 4.0 km CSAMT survey.
- 4 diamond drill holes for 2392.6m.
- Downhole EM on the four drill holes.

6.1.1 Geology

The main tracks in the Itat Creek area were mapped at 1:1000 scale (Plan 1) and the previous mapping for the area was compiled and interpreted (Plan 2). To further assist with the geological interpretation of the prospect the 6 holes (MS1-MS6) were relogged. MS1-MS5 were located at the MRT coreshed at Mornington and MS6 is stored at the Pasminco Coreshed at Tullah. These drill logs are included as Appendix 1 and sections are given as plans 3-5.

As a result of this work, and results from the drilling of MS7-MS10 (see below), a simple (simplified) stratigraphy was recognised. In the Itat Creek area (Plan 1) the stratigraphy, from west to east, is basal feldspar phyric lavas and volcaniclastics (lava breccias) interpreted to be Central Volcanic Complex (CVC) equivalents, progressively overlain by fine volcaniclastic siltstones (ash volcaniclastics) with minor shale, coarse graded mass flows and black shale with quartz-feldspar porphyry sills. The Itat Creek sequence, above the CVC, are interpreted to be Tyndall Group correlates.

In the Itat Creek area the volcaniclastic and sedimentary units strike NW and in general dip and face to the SW. In the vicinity of MS3 there is some overturning with bedding dipping to the NE. To the west of this volcaniclastic and sedimentary sequence a major quartz-feldspar porphyry body is exposed. Drilling has confirmed that the porphyry is a series of sub volcanic sills that intruded into wet sediment with peperite commonly developed at the top and base of each sill. The porphyry body has a faulted contact with the volcaniclastic and sedimentary sequence in the Itat Creek area (Itat Creek fault). The Itat Creek Fault is a NS striking, east dipping, crush and fracture zone with minor pug, best developed in DDH MS6.

The IP survey completed by MLMRC in 1977 (Walter, 1977) shows the zones of highest chargeability occur over the porphyry. This was drill tested by MLMRC in 1979 and black shale was intersected at a shallow depth. The shale was interpreted to explain the high chargeability and the hole was terminated. The presence of the black shale underneath the porphyry and the stratigraphic sequence recognised in the Itat Creek area suggested the potential for the Itat Creek stratigraphy to be repeated beneath the porphyry. This interpretation, also suggested by previous workers, significantly increases the exploration potential at the Beatrice Prospect.

On the ridge immediately east of Itat Creek a quartz-feldspar porphyry is exposed and has a similar IP response to the western quartz-feldspar porphyry body. Field checking has confirmed the presence of black shale as float. It is interpreted that the Itat Creek stratigraphy is repeated on this ridge and this implies either rapid thinning of the sequence or the presence of an additional Itat Creek parallel fault (Plan 2).

The base metal mineralisation at Beatrice occurs as disseminations, veinlets, clots and clasts (clast replacements) mainly within the black shale, coarse volcaniclastic and fine volcaniclastic but also within the quartz feldspar porphyry. Occasionally the veinlet density is high and a sphalerite stockwork is formed (eg MS10 459.2-460m and 620.7-622.5m).

6.1.2 Geochemistry

Rock chip sampling on the main tracks within Itat Creek (location and assay data in Appendix 2) identified 10-20m wide intervals of Pb/Zn mineralisation, with several modal% fresh sulphides in places, associated with epiclastic sediments beneath black shales. Almost all the rock chip samples collected have elevated Au, Pb, and Zn. The best results come from two hand picked samples which assayed, 10.51% Zn, 2.1% Pb, 2.4 g/t Au and 16.1 g/t Ag, and 4.6% Zn, 1.96% Pb, 0.70 g/t Au and 11.1 g/t Ag respectively. The best rock chip assayed 2.4% Zn, 1.9% Pb, 0.37 g/t Au and 9.3 g/t Ag over 2m. These samples also have elevated Ba, Cd, Mn, Mo and Te. Interestingly copper is very low in these samples with a highest result of 464 ppm. Petrographic descriptions of nine of the mineralised rock-chip samples are also included in Appendix 2.

Two distinct chemical signatures associated with basemetal mineralisation are noted from multi-element analysis of the core assays. The strip log from DDH MS8 (Figure 4) demonstrates this well. From 560-580m zinc and lead mineralisation has associated Mn, Ag, Cd, Co, Fe, Sb and possibly Ni and Sn. This is the most common mineralisation type of sphalerite in blebs, disseminations and associated with carbonate veinlets. Zinc and lead mineralisation intersected from

770-780m has no elevated Mn and has associated Ag, Cd, Co, Fe, Sb as above but also elevated As, Au and Bi. This mineralisation is associated with a late-stage quartz-carbonate- arsenopyrite-sphalerite veinlet and the element assemblage is considered to be indicative of some magmatic input.

A 685 sample (including standards and duplicates) mobile metal ion (MMI) survey was completed over the entire Beatrice grid which was refurbished as part of this exercise. Samples were collected over the entire grid with samples collected at 25m intervals and composited at 50m intervals (with the exception of SDS 3724 that was sampled on 25m centres). Samples were submitted to Amdel for analysis of Cu, Pb, Zn, Ag, Au, Ba, As, Cd, Co, Bi, Mo, Ni, Pt, Pd, Sb, and Tl by proprietary method DL40. Results are included in Appendix 3 and sample locations are shown on Plan 8.

The samples were analysed in four batches and there were significant levelling problems between the batches; the principal component analysis outlined below partially removes this effect, but, interpretation of individual elements was done using datasets levelled to the median for each batch.

Principal component analysis was completed for all elements, with the exception of Au, Tl, Pt and Pd for which a large proportion (>50%) of the data have below detection limit results. Three elemental factors were defined by this analysis (Figs. 4, 5 and 6). One of these factors (Factor 1: As, Bi, Sb, Pb and Ba, Fig. 4) is regarded as a proximal indicator to mineralisation. The main mineralised zone at Itat Creek is highlighted by this factor (as would be expected for a proximal indicator). Factor 2 (Co and Ni; Fig. 5) appears to define the outline of the Jurassic Dolerite and an anomaly train down the course of Itat Creek resulting from the presence of dolerite boulders in the thin glacial deposits in the valley. This factor is therefore interpreted to reflect lithological variations rather than indicate the presence of buried mineralisation. The third factor (Factor 3: Ag, Cd, Cu and Zn, Fig. 6) is regarded as a distal indicator of mineralisation. Factor 3 may be particularly useful for highlighting target areas beneath the quartz porphyry and two such areas can be seen on Figure 6. The first is the northern end of the Itat Creek area where there is coincidence of two of the factors. This is a very clearly defined anomaly that is also obvious in the levelled Zn data (Figure 8). Holes MS7, MS8 and MS10 were drilled to test this anomaly.

The second area is in the western part of the grid, highlighted in Factor 3. Subsequent field inspection of this anomaly has shown it to be associated with weak sericite-K-feldspar alteration of the quartz-feldspar porphyry. This is an extensive anomaly (at least 500m long; Fig. 8) which is also associated with a resistivity low in the 1979 MLMRC IP data.

The third area is in the southeast portion of the grid, in an area of glacial cover with some outcropping Owen Conglomerate to the west. The anomaly is not closed-off and further sampling on the adjacent EL 13/99 Linda is required to detail the anomaly prior to further follow-up.

6.1.3 Drilling

Four diamond drill holes (MS7-MS10) were completed for 2392.6m. All of the holes were drilled by Diamond Drilling Tasmania using a CS1000 P4 rig. The rig was dragged into the MS7 site using an excavator and was positioned at the remaining sites using a Squirrel Helicopter from Helicopter Resources.

A summary drill log was completed at site and the drill core was then flown and then driven from the drill site to Pasminco's core farm at Tullah. The core was measured (for recoveries), photographed, geologically logged and magnetic susceptibility measurements were made (readings taken at each core block, or in some cases on 1m intervals). Drill core was cut and samples analysed by Analabs for Ag, As, Bi, Ca, Cd, Cu, Co, Fe, K, Mg, Mn, Na, Ni, Pb, Sb, Sn and Zn using ICPMS, Au by 50g fire assay and Ba by pressed powder XRF.

Drill sections are presented as plans 3-5, drill logs, down hole surveys and collar details are included in Appendix 1, assay results in Appendix 4 and magnetic susceptibility measurements are presented in Appendix 5.

<u>MS7</u>

This hole was designed with two aims in mind:

1. To test the interpretation that the Itat Creek stratigraphy occurs underneath the quartz feldspar porphyry and to test for mineralisation within this stratigraphy.
2. To test the geology on the eastern side of the Itat Creek Shear at depth.

Hole MS7 was commenced on the 23/11/98 and completed on the 21/1/99 at a depth of 550m. A summary log of the hole is shown as follows:

From	To	
0.0	109.3	Quartz feldspar porphyry.
109.3	231.8	Black shale
231.8	254.0	Quartz feldspar porphyry with pepperitic top and base
254.0	261.2	Black shale
261.2	417.3	Coarse pumiceous volcaniclastic massflows.
417.3	550.0	Ashy volcanic, minor massflow units

This hole confirmed that the mineralised stratigraphy, black shale underlain by coarse volcaniclastic and then fine ashy volcaniclastic, seen in Itat Creek is repeated beneath the quartz-feldspar-porphyry west of the Itat Creek shear. This result has major implications for the prospectivity of the Beatrice Prospect as there is now known potential to host mineralisation beneath the quartz-feldspar-porphyry. Core orientations indicate that stratigraphy has an overall N-NE strike and a steep (60-80°) westerly dip, although folding complications may be present (Plan 3). The hole failed to penetrate the Itat Creek Fault, and it is probable that the fault is shallower than interpreted, although this may be by as little as 2-3°.

MS7 failed to intersect ore-grade and(or) width mineralisation, however, broad intervals of low grade mineralisation are indicated from assay results. Significant intersections, calculated on the basis of Zn content, were:

at a 0.1% Zn cut-off:
109.3-113.0m, 3.7m @ 0.24% Zn, 0.05% Pb, 45 ppm Cu and 1.3 g/t Ag.
132.0-134.0m, 2.0m @ 0.19% Zn, 0.04% Pb, 49 ppm Cu and 0.9 g/t Ag.
180.0-198.0m, 18m @ 0.18% Zn, 0.11% Pb, 75 ppm Cu and 1.7 g/t Ag.
254.0-255.8m, 1.8m @ 0.22% Zn, 0.03% Pb, 44 ppm Cu and 0.4 g/t Ag.
261.2-265.0m, 3.8m @ 0.14% Zn, 0.07% Pb, 59 ppm Cu and 1.2 g/t Ag.
285.0-307.0m, 22.0m @ 0.2% Zn, 0.07% Pb, 70 ppm Cu and 1.5 g/t Ag.
315.1- 325.0m, 9.1m @ 0.16% Zn, 0.11% Pb, 58 ppm Cu and 4.6 g/t Ag.
364.0-366.0m: 2.0m @ 0.14% Zn, 0.18% Pb, 53 ppm Cu, and 0.8 g/t Ag.
374.0 -378.0m, 4.0m @ 0.17% Zn, 0.35% Pb, 189 ppm Cu, 1.3 g/t Ag.
394.0-405.0m, 11.0m @ 0.15% Pb, 0.07% Zn and 1.2 g/t Ag.

As values peak at 236 ppm in the mineralised interval between 285 and 325m, but, decrease significantly downhole (to generally <10 ppm). Au values are uniformly low (97% of assays are <0.01 ppm), with a maximum of 0.6 g/t at 388-390m (this elevated value is not associated with elevated base metals, Ag or As). Cu contents are also low (<70 ppm) with the exception of two spikes of 520-550 ppm Cu at 474-476m and 499-501m where minor chalcopyrite in veins, associated with chlorite-K-feldspar-hematite alteration was intersected.

Much of the base metal mineralisation in the black shale units is not visible and must be finely disseminated and(or) mixed with the visible pyrite, however, from 184-196m a zone of thin (<5 mm) carbonate veinlets with disseminated sphalerite and minor galena was intersected. Minor disseminated and veinlet sphalerite appears to be associated with chlorite altered volcaniclastic from 374-377m, and 401.1- 407.7m and sphalerite+galena replacement of carbonate-rich clasts and nodules, in coarse volcaniclastics, was recorded at 317.0-320.0m and 390.9 – 407.4m.

Magnetic susceptibilities were measured at the core block markers for the entire hole (Appendix 5). Zones of K-feldspar+magnetite±chlorite alteration in the quartz-feldspar-porphyry (28-88.5m) and in the ashy volcaniclastic (491-499m) are confirmed by high magnetic susceptibility readings.

Downhole EM was also completed on the hole. Off-hole anomalies were recorded and are interpreted to reflect variably conductive shale units rather than massive sulphide accumulations. The reader is referred to Appendix 8 for additional information.

MS8

This hole was designed to test a very clearly defined MMI anomaly that is located on quartz feldspar porphyry (see section 6.1.2) in the northern part of the Beatrice Grid. Hole MS8 was collared on 22/1/99 and completed on 7/5/99 at a depth of 798.7m. A summary log of the hole is as follows:

From	To	
0.0	191.8	Quartz feldspar porphyry.
191.8	197.8	Volcaniclastic sandstone and shale.
197.8	292.9	Quartz feldspar porphyry.
292.9	306.2	Intercalated black shale and quartz feldspar porphyry
306.2	318.2	Black shale
318.2	344.2	Intercalated black shale and quartz feldspar porphyry (pepperitic contacts)
344.2	373.7	Black shale and minor sandstone; major fault zones at 360.1-364m and 371.6-373.7m; Sphalerite-rich mineralisation in lower 2m of unit.
373.7	447.3	Quartz feldspar porphyry. Strongly Sil- Co- Chl ± Kfs veined with weak sphalerite>galena mineralisation.
447.3	583.3	Black shale and minor siltstone/sandstone. Sphalerite> galena Mineralisation from 557 - 583.3m.
583.3	651.6	Quartz-feldspar-porphyry
651.6	665.4	Ash volcaniclastic and minor volcaniclastic sandstone. Generally 0.5-1.0% sphalerite, but, up to 5% sphalerite in matrix of sandstone units.
665.4	696.5	Volcaniclastic sandstones (pumiceous) with trace sphalerite.
696.5	787.3	Intercalated shale and volcaniclastic ash to sandstone units. Variable Py±Sp>Gn mineralisation; narrow intervals of up to 10% Sp (in sandstone beds) but generally <0.5% Sp.
787.3	798.7	Lava breccia with Sil+Kfs/hem/mag alteration. Only trace Py+Cpy (CVC correlate)

The stratigraphy in this hole was largely as predicted, with the exception of the presence of quartz-feldspar porphyry intruding lower into the sequence than seen in other holes and the presence of more individual sills of porphyry. The presence of significant mineralisation in the "ash volcaniclastic" (although often more common in fine sandstone beds rather than the ashes themselves) is consistent with results from drilling in Itat Creek (e.g., MS3), however, there appears to be a larger shale component in the "ash volcaniclastic" unit in this hole than previously intersected. Mineralisation (veins, disseminations and some clast replacement) occurs in the shales, coarse volcaniclastics and ash volcaniclastics, but, is rare in the porphyry sills, with the exception of the unit from 373.7 – 447.3m where minor sphalerite, galena and arsenopyrite occur in late carbonate-chlorite-silica veins. The lower part of the black shale in DDH MS8 hosts grey carbonate-rich nodules (also seen in MS7) and thin beds of calcareous mudstone; these are strongly replaced by sulfides (pyrrhotite+chalcopyrite+sphalerite+galena) from 561.9-568.1m. The carbonate-rich beds and associated mineralisation were not seen in previous drilling (largely east of the Itat Creek Fault). Core orientations give consistent bedding orientations, shallowly east dipping, in the interval 494-529m and steep north dipping in the interval 722-740m. The hole was finally terminated when CVC like lave breccias with 'granite' type alteration were intersected.

Assays from the hole are included in Appendix 4. Intersections from the hole are:

at a 0.1% Zn cut-off:

242.7 - 250.4m, 6.7m @ 0.24% Zn, 0.21% Pb and 2.5 g/t Ag
316.0 - 318.0m, 2.0m @ 0.25% Zn, 275 ppm Pb and 1.2 g/t Ag within black shale.
337.4 - 340.6m, 3.2m @ 0.17% Zn, 512 ppm Pb and 1.3 g/t Ag within shale and porphyry.
344.2 - 352.2m, 8.0m @ 0.16% Zn, 625 ppm Pb and 1.4 g/t Ag within black shale.
359.6 - 363.7, 4.1m @ 0.33% Zn, 0.14% Pb and 2.3 g/t Ag within black shale.
410.0 - 412.0m, 2.0m @ 0.11% Zn, 0.3% Pb and 5.3 g/t Ag within porphyry.
434.0 - 436.0m, 2.0m @ 0.16% Zn, 53 ppm Pb and 0.2 g/t Ag within porphyry
446.4- 457.0m, 10.6m @ 0.19% Zn, 500 ppm Pb and 2.1 g/t Ag within black shale
462.6 - 474.0m, 11.4m @ 0.12% Zn, 630 ppm Pb and 1.1 g/t Ag within black shale
515.0 - 583.4m, 68.4m @ 0.49% Zn, 0.21% Pb and 7.8 g/t Ag within black shale
590.1 - 591.8m, 1.7m @ 0.49% Zn, 580 ppm Pb and 0.6 g/t Ag within porphyry
651.6 - 666.4m, 14.8m @ 0.34% Zn, 0.13% Pb and 3.5 g/t Ag within ashy volcaniclastic
684.3 - 702.9m, 18.6m @ 0.22% Zn, 780 ppm Pb and 1.6 g/t Ag in volcaniclastic sandstone.
707.6 - 754.1m, 46.5m @ 0.29% Zn, 800 ppm Pb and 2.6 g/t Ag in shale and ashy volcanic.
758.3 - 784.4m, 26.1m @ 0.37% Zn, 0.12% Pb and 5.1 g/t Ag in shale and ashy volcanic.

at a 1.0% Zn cut-off:
561.9m - 562.9m, 1.0m @ 1.58% Zn, 0.71% Pb and 26.7 g/t Ag
567.0m - 569.0m, 2.0m @ 1.18% Zn, 0.38% Pb and 14 g/t Ag
572.5m - 573.8m, 1.3m @ 1.16% Zn, 0.32% Pb and 10.6 g/t Ag
576.8m - 583.4m, 6.6m @ 1.18% Zn, 0.55% Pb and 12.5 g/t Ag
653.2m- 654.3m, 1.1m @ 1.2% Zn, 0.4% Pb and 6.9 g/t Ag
735.2m - 736.5m, 1.3m @ 1.4% Zn, 0.28% Pb and 5.5 g/t Ag
779.7m - 780.3m, 0.6m @ 1.38% Zn, 0.51% Pb, 24.8 g/t Ag, 0.4 g/t Au, 1.35% As
781.7m - 782.4m, 0.7m @ 1.14% Zn, 0.16% Pb, 3.8 g/t Ag

Cu results are generally low, <100 ppm, but scattered high values occur throughout the section, with a maximum of 1.3m @ 0.1% from 665.1-666.4m. Arsenic is spikily high, up to 0.65% on the upper margin of one porphyry body and up to 1.35% in veins in the lower part of the ash volcaniclastic unit. Au is weakly elevated throughout the assayed section (i.e., many more above detection limit assays than for MS7). Also possibly significant is the interval 648.2-651.6m, 3.4m @ 0.57% Ba, generally barium contents are <0.4%. As with DDH MS7 base metal values are uniformly low in the chlorite-feldspar ±magnetite/hematite altered volcanics (from 788.5 - 798.7m) which have <100 ppm Pb and Zn and <50 ppm Cu.

Magnetic susceptibility measurements (Appendix 5) are high in the pyrrhotite mineralised, carbonate-rich interval in the shale (561.9-568.1m) and also where "granitic" alteration is obvious in the CVC at the end of the hole (787.3m – EOH).

Downhole EM was also completed on the hole. Off-hole anomalies were recorded and interpreted to reflect variably conductive shale units and no anomalies attributable to massive sulphide accumulations were recorded. The reader is referred to Appendix 9 for additional information.

MS9

MS9 was drilled from the same site as MS8 and was targeted at the prospective Itat Creek stratigraphy beneath the quartz feldspar porphyry where IP and CSAMT features occur in the core of an anticlinal structure (see Section 6.1.4). Target depth was 250-300m with the hole planned to 420m. Hole MS 9 was commenced on 10/5/99 and completed at 387.5m on 17/6/99. A summary log for this hole is shown on the following page.

From	To	
0.0	38	Quartz-feldspar-porphyry;
38	73.5m	Quartz-feldspar-porphyry breccia with a matrix of black shale; peperite.
73.5	238.2	Black-grey shale with thin volcaniclastic interbeds. Variable disseminated pyrite; no significant visible sphalerite or galena.
238.2	387.5	Quartz-feldspar-porphyry, strongly K-feldspar/magnetite altered from 300m.

No significant mineralisation was intersected in the 'target position' (250-300m) and the CSAMT and IP anomalies were initially ascribed to the shale unit. It is important to recognise that the low resistivity anomaly is at a shallower level than the high chargeability anomaly. Basic resistivity measurements were collected from MS9 using a multimeter with the electrodes at a fixed spacing. These data clearly show that the lowest resistivities are within the peperite. The low resistivity is a result of carbonisation (graphite) of the included shale by the thermal effect of the porphyry. The peperite at the base of the upper porphyry is thicker in MS9 than in other holes (20-30m vs. 1-2m in most holes). The high chargeability is a response to a thick relatively flat lying black shale unit occurring at shallower levels in the hinge of an anticline (Appendix 6).

Assay results were as expected with almost all zinc assays around 100 ppm and only one sample returning > 1000 ppm Zn (1.5m @ 1930 ppm Zn from 72-73.5m). Pb results are also low (languishing around 100-200 ppm) with no assays above 1000 ppm Pb.

Magnetic susceptibility was measured at the core block markers for the entire hole (Appendix 5). The magnetic susceptibility is very low except for 299.2m - EOH where K-feldspar - magnetite alteration in the quartz-feldspar porphyry was intersected.

Downhole EM was also completed on the hole. Off-hole anomalies were recorded and interpreted to reflect variably conductive shale units and no anomalies attributable to massive sulphide accumulations were recorded. The reader is referred to Appendix 8 for additional information.

MS10

MS10 was targeted at the centre of the major partial leach soil anomaly in Itat Creek. The target horizon was the coarse volcaniclastic unit in the footwall of the Itat Creek Fault. Hole MS 10 was commenced on the 29/7/99 and completed at 656m on the 21/9/99. A summary log is as follows:

From	To	
0.0	21.2	Sheared Black Shale, peperitic contact to;
26.2	71.5	Quartz-feldspar-porphyry, faulted contact to;
71.5	256.0	Black Shale; interval 71.5-90.0 is strongly broken (Itat Creek Fault). Shale is variably pyritic.
256.0	311.2	Quartz-feldspar-porphyry, moderately sericite altered, peperitic contact to;
311.2	374.8	Black shale, variably pyritic, trace pyrrhotite and base metals.
374.8	492.4	Generally pumiceous volcaniclastic sandstone with minor Breccia units (dominantly limestone clasts) and ashy volcaniclastics. Variable clasts and disseminated base metal mineralisation, with 0.8m @ >10% base metal veining from 459.2-460m.
492.4	505.2	volcaniclastic sandstone interbedded with ash volcaniclastic, decreasing base metal content.
505.2	624.7	Ash volcaniclastic and minor shale, variably pyritic with minor pyrrhotite, generally minor base metals, but, narrow intervals (517-519m and 620.7-622.5m) with up to 3-4% vein and disseminated sphalerite.
624.7	635.0	Interbedded ash volcaniclastic and coarse volcaniclastic.
635.0	656.4	Coarse volcaniclastic (lava breccia in part), feldspar-phyric, variable Chlorite-k feldspar-magnetite alteration; minor pyrite and chalcopyrite (CVC).

The overall stratigraphy and lithologies intersected in DDH MS10 were very similar to those seen in MS8, including the presence of carbonate nodules and pyrrhotitc mineralisation in the lower part of the Black Shale. The major fault zone from 71.5–98.2m is correlated with the Itat Creek Fault, and most of the hole is therefore drilled in the footwall of this structure. Core orientations at 320-330m give bedding orientations clustering around dipping 55° to 330° (mag.) with bedding apparently swinging to a dip of 60-70° to 270° by 561m. Visible base metal mineralisation in MS10 is largely restricted to the "coarse volcaniclastic" interval and most of the sphalerite occurs within a blue grey siliceous breccia. The breccia consists of angular to subrounded clasts, to 30 mm, which include limestone, feldspar crystal-rich pumice, pale white volcanic clasts and blebs/clots

(clasts?) of sphalerite. The size of sphalerite clasts is similar to the other clast size suggesting that the sphalerite is replacing a particular clast type. The obvious first choice is replacement of the limestone clasts however many limestone clasts are totally unaltered and are surrounded by sphalerite. At 427.4m the breccia clearly crosscuts a clast implying the breccia is at least post diagenesis.

At the time of writing assay results have been returned for MS10 for the interval 398 - 483.6m. The best interval was 0.8m @ 8.75% Zn, 1.7% Pb, 105 ppm Ag from 459.3-460.1m. The entire interval assayed 95.6m @ 0.27% Zn, 620 ppm Pb and 3.7 ppm Ag. Intersections, calculated on the basis of Zn content, include:

At a 0.1% Zn cutoff:
398.0-402.0m; 4m @ 0.29% Zn, 260 ppm Pb, 1.7 ppm Ag
407.0-414.0m; 7m @ 0.19% Zn, 244 ppm Pb, 1.7 ppm Ag
416.2-424.0m; 7.8m @ 0.24% Zn, 260 ppm Pb, 4 ppm Ag
450.6-452.6m; 2m @ 0.58% Zn, 180 ppm Pb, 2.2 ppm Ag
456.0 –462.0m; 6m @ 1.4% Zn, 3790 ppm Pb, 21 ppm Ag
464.9-483.6m; 18.7m @ 0.22% Zn, 140 ppm Pb, 1 ppm Ag

Further zones of significant base metal veining occur at 620.7 - 622.5m where +5% Zn and 2% Pb is expected from assays, the results of which were not available at the time of writing.

Magnetic susceptibility was measured at the core block markers for the entire hole (Appendix 5). Elevated magnetic susceptibility is recorded from 350 - 371.4m which corresponds to an interval of pyrrhotitic black shale.

One loop of DHEM was completed in DDH MS10. The interpretation of the data suggests that a broad off-hole response is very similar to that seen in previous holes (MS7-9) and is related to the black shales. The reader is referred to Appendix 10 for further details.

6.1.4 Geophysics

During the year a pole-dipole induced polarisation survey and an orientation CSAMT survey were completed. A brief summary of each survey follows and the reader is referred to Appendices 6 and 7 for full reports.

6.1.4.1 Pole-Dipole Induced Polarisation Survey

The aim of this survey was to map the two-dimensional resistivity and chargeability character of the Beatrice Prospect stratigraphy with an outcome of defining anomalous response that could be attributed to base metals

mineralisation. Five survey lines (8.8 km) were completed at a cost of $61,600 (Appendix 6). It was planned to use 12 dipoles (n=12) for depth penetration however this was logistically virtually impossible. A compromise was reached using n=8, which was still logistically difficult and progress was extremely slow resulting in a very expensive survey.

The target was low resistivity and high chargeability zones, and/or an interpreted structurally favourable site. The inference that a low resistivity and/or high chargeability zone would be attributed to base metal sulphide mineralisation necessitates an assumption of homogeneity of the local black shale horizons and minimal pyrite, pyrrhotite and graphite content.

Three zones considered to exhibit anomalous resistivity and chargeability were defined from the inverted IP sections. Generally anomalous responses were observed over the shale outcrop. Diamond drillhole MS9 was targeted at the best low resistivity and high chargeability zone on Line 1800N and Line 2000N. No significant mineralisation was intersected (section 6.1.3).

The second IP target defined from the pole-dipole survey is well tested by MS02 and MS07 and also appears to have been explained by black shale responses. The third IP target is not a high priority geophysical target, however, it is associated with geochemical anomalism and should perhaps be drilled on that basis. The IP data supports a hypothesis for accompanying chargeable minerals (pyrite, galena, graphite, chalcopyrite) but does not provide a particularly anomalous response (much lower in amplitude than the target drilled at MS9), nor does the modelling provide a high confidence with regard to the source shape and/or depth. The IP target is poorly resolved and is described as a "blob" at a depth of (100-200m).

6.1.4.2 CSAMT Survey

Only two lines of CSAMT data were acquired with the initial aim of evaluating the technique for application at the Beatrice Prospect and Western Tasmania in general. In addition it was intended to see if an anomalous conductivity response could be detected below stratigraphy mapped with the IP survey with an aim of defining response that could be attributed to base metal mineralisation. Two survey lines (4 km) were completed at a contractor cost of $8,000.

The target was a zone of low resistivity and high chargeability. Much the same as the IP the inference that a low resistivity and/or high chargeability zone would be attributed only to base metal sulphide mineralisation necessitates an assumption of homogeneity of the local black shale horizons and minimal pyrite, pyrrhotite and graphitic content.

Numerous modelling and processing routines were trialed on the data and a report compiled outlining the advantages and disadvantages of each (Appendix 7). A comprehensive analysis made on the noise characteristics of the data with the aim of discriminating geological response from system and cultural induced response (not an easy task with CSAMT!).

No priority drill targets were delineated on the basis of the CSAMT results. Some minor response was detected in the vicinity of the IP response targeted by MS9, however, this would not have formed a CSAMT target in its own right.

Low resistivity zones generally conform to the location of known black shale horizons. The CSAMT modelling does not have the resolving power of the pole-dipole IP sections and only gave a gross picture of the electrical stratigraphy. Conceptually if a large highly conductive base metal orebody had been present then the CSAMT data may have resulted in identifiable anomalous response. The CSAMT data do not appear to provide enough detail to allow resolution of a moderately conductive sulphide system within variably conductive and extensive black shales.

CSAMT provided a much more economically viable technique than the IP and did provide additional depth information. Use of the technique is recommended where black shales are not as extensive as at Beatrice (e.g., exploring within the Tyndall Group). If delineation and definition of shale horizons on a regional scale was the geological goal then application of the technique could be economically viable.

6.1.4.3 DHEM Surveys

The aim of the downhole EM surveys was to delineate anomalous electromagnetic response that could be associated with basemetal mineralisation in the vicinity of completed drillholes. All drillholes were surveyed (Appendix 8-10).

Off-hole electromagnetic responses were detected in all drillholes. Initial modelling of results suggests that the responses are not coincident in location and that the actual source of each anomaly is dependent on the transmitter-drillhole geometry. The black shale (and possibly shale/porphyry peperite) at the Beatrice Prospect appears to be variably conductive providing a focus area for excitation of secondary electromagnetic fields in locations that are primarily dependent on the location of the surface transmitter loop. The offhole responses are all lithological and no targets were recommended for drill testing.

Continued logging of drillholes with DHEM is recommended especially now that the electromagnetic character of the black shale is beginning to be established. An anomalous response due to base metal mineralisation could quite easily be orders of magnitude greater than the shale response. In addition, the shale response is typically very broad in wavelength facilitating delineation of ore responses that may be closer to the drillhole (<100m) through a narrow wavelength response.

6.2 West Sedgwick.

The previous holes drilled at West Sedgwick (WS1-WS8) were relogged (Appendix 11). A full literature review of previous work was completed and is presented in section 5.2. There is considered to be good potential for discovery of a basemetal orebody in this area particularly underneath he glacial cover. Further work is planned (section 7.2).

6.3 Walford Peak.

Since the tenement was granted to Pasminco Exploration a full literature review and data analysis have been completed (Weber, et al., 1997). Pasminco's initial interest in the area was for intrusive related Cu-Au systems, possibly associated with magnetic and gravity highs (Weber et al., 1997), and for Au in a "Leyshon" style breccias in the Dora Conglomerate, similar to that interpreted in the Selina conglomerate to the north (Aliano, in Weber, et al., 1997). As an initial step in exploring the area, it was recommended that the area be mapped, to define alteration types and possible breccia units in the Dora Conglomerate, and that old workings be mapped and rock-chip sampled in detail to elucidate the style of mineralisation (Denwer, 1998).

6.3.1 Mapping

Access can be gained to the Lake Dora area via a vehicular track, commencing at the Anthony Road west of Newton Peak. It is about 16 km from Anthony Road to the Lake Dora Prospect, and the track passes directly through the centre of the prospect.

During 1997/98 the access track was refurbished, the old Goldfields grid was relocated and mapping and sampling commenced. However, during particularly heavy rainfall the track was washed out and the work program was delayed, whilst repairs to the track were completed. Mapping was only at an early stage, with five days spent on the ground, and results from this preliminary work were not included in the 1998 report (Denwer, 1998).

Detailed mapping and rock-chip sampling of the Lake Dora area was completed (intermittently) in January to June 1999 by AMcN and KPD. Rectified orthophotos at 1:5,000 scale were used as base maps, and as the country is relatively open, geology could be plotted directly onto the orthophotos. Mapping was completed over the area from Lake Spicer to approximately 1 km north of Lake Dora. It was initially planned to continue mapping to the Sticht Range – Walford Peak saddle, however, a change in exploration focus resulted in the planned mapping and sampling programs not being completed.

Mapping (Plan 6) has confirmed the overall stratigraphy as described by previous workers; a generally west facing sequence with the Sticht Range Beds at the base overlain by a wedge of Rhyolitic ?lavas, intrusives and volcaniclastics, which thickens to the north, and which in turn are overlain by the Dora Conglomerate (volcaniclastic conglomerate and sandstone) and the Siliciclastic Owen Conglomerate.

It has not been possible to confidently sub-divide the main volcanic package which has, however, been sub-divided into 6 lithofacies ranging from obviously coherent and flow-banded in part (type qfp; Plan 6) to obviously clastic (types v1, v2 and v4). Intruding into this package are at least seven small (<140x40m) bodies of feldspar-hornblende-phyric ?Andesite (two of these bodies were located previously; Lewis [1994]) which appear to be late stage intrusives (they are less altered than their hosts and appear to intrude the base of the Dora Conglomerate at 387870mE 5353540mN). The overlying Dora Conglomerate appears to have an extremely irregular contact with the volcanics, this is in part structurally related but, also appears to be partly a primary sedimentary feature. Our mapping indicates that the Dora Conglomerate extends further to the north, immediately west of Michael Tarn and on the slopes of Walford Peak (around 386660mE 5355680mN), than shown on previous maps and forms a probably continuous unit beneath the Owen Conglomerate. The contact between the Dora and the Owen Conglomerate appears to be conformable, and in one locality, gradational over <1m.

The major alteration type in the Dora-Spicer area is chlorite±silica. This alteration assemblage is restricted to the volcanic package between the Sticht Range Beds and the, essentially unaltered, Dora Conglomerate. In the field the strongly chlorite

altered rocks are mainly volcaniclastic lithofacies which are covered in a conspicuous orange lichen, which highlights the presence of this alteration. Previous workers have indicated a close association between the pervasive silica-chlorite alteration and magnetite/hematite veining and(or) pyrite/chalcopyrite mineralisation, and this is supported by our mapping. It has been assumed that the chloritic alteration represents an extensive alteration zone, however, when Aberfoyle sent samples to Tony Crawford at the University of Tasmania for petrology, he described the alteration as compatible with regional burial metamorphism.

Narrow restricted zones of intense silica-sericite-pyrite alteration, between zones of strong sulphide veining, and pervasive, but restricted, zones of Silica+k-feldspar/hematite are the two other main types of alteration (see Plan 6). Variable Hematite alteration occurs at the top of the Dora Conglomerate, immediately below the Owen Conglomerate, in the southern part of the area and a zone of jaspery hematite alteration of a rhyolitic ?lava margin was recorded near 387150mE 5354500mN.

Mineralisation ranges in style from disseminated pyrite ± chalcopyrite to vein chalcopyrite + magnetite (± malachite and azurite) ± sphalerite/galena and disseminated pyrite + galena + fluorite. The host chloritic alteration zone appears to narrow to the north, beneath Walford Peak, and mineralisation becomes dominated by magnetite + chalcopyrite/pyrite veins and narrow (to 0.3m width) zones of strong (30-60%) sulphide development dominated by pyrite, with lesser galena, chalcopyrite and sphalerite. Cobalt–rich minerals are known to occur in association with strong pyrite veining (see below).

6.3.2 Rock chip Geochemistry

During the reconnaissance mapping eleven samples were collected from old workings in the Lake Dora area (Appendix 12). The mineralisation in these old working occurs as pyritic and sheared volcanic within chlorite altered rocks. The samples have quite wide ranges in all elements detected. Samples have low to moderately elevated Cu (87- 7008 ppm), gold (<0.01 to 0.39 g/t Au), Pb (41-1962 ppm) and Zn (338-2074 ppm) and all have anomalous silver (2-12 ppm).

During the detailed mapping phase a further 54 rock-chip samples were collected, largely from the dumps at old workings, and were analysed at Analabs for Ag, As, Bi, Cd, Cu, Co, Fe, Mn, Ni, Pb, Sb, Sn and Zn using ICPMS, Au by 50g fire assay and Ba by XRF. Results are included in Appendix 12 and sample locations are shown on Plan 7.

The most interesting results are from old workings on the SE slopes of Walford Peak, in the central-northern part of the mapped area. three zones of interest were located:

1. A cluster of workings and outcropping vein (sulphides +/- magnetite) and breccia-matrix style mineralisation, hosted by chlorite-silica altered volcanics, in a zone approx. 50m wide with a strike length of >200m (commencing at 387030mE, 5355535mN and not closed off to north). The best result from this zone was from the southernmost working which returned 9.65% Zn, 2.1% Pb, 0.5% Cu, 0.5 g/t Au and 58 g/t Ag (331941). However, mineralisation is patchy with other dump samples from the same working returning 0.2-0.9% Zn, 0.5-0.9% Pb, 0.3-0.5% Cu, 0.1-0.4 g/t Au and 54-88 g/t Ag. Other significant results from this trend include:

   Sample 331938 (dump sample from a >10m deep shaft) 1.74% Zn, 0.85% Pb, 3.25% Cu, 1.1 g/t Au and 48 g/t Ag.

   Sample 331933 (outcropping pyritic veining) 1.9 g/t Au, 16 g/t Ag, 0.2% Cu, 110 ppm Zn and 430 ppm Pb.

2. A single small pit on a ridge of strongly chlorite-silica altered quartz-eye volcanics at 386845mE, 5355385mN. Sulphide-rich vein mineralisation from this pit returned (331931) 48.8 g/t Au, 250 g/t Ag, 3.85% Cu, 0.1% Zn, 0.46% Pb, 6.2% As and 2.25% Co (the high As and Co resulting from the presence of erythrite (a CoAs oxide) first noted by Harcourt Smith [1898]). The host rocks to these veins (with disseminated sulphides) returned 0.3 g/t Au, 4 g/t Ag, 0.1% Cu, 0.2% Zn and 0.14% Pb. Sampling of an adit at the foot of this ridge did not return significantly anomalous results, apart for 0.2% Zn (sample 331960). However, previous sampling of this adit returned significantly higher results (6.3% Cu, 2 g/t Au, 0.5% Pb, 0.4% Zn and 152 g/t Ag; sample 1167 from Purvis et al., 1983).

3. A 25m long trench with up to 0.3m wide zones of sulphide-rich mineralisation at 386735mE, 5355215mN. The mineralisation returned 0.04 g/t Au, 14 g/t Ag, 1.1% Pb, 1.2% Zn and 0.14% Cu (Sample 331927), whilst mineralised host returned 0.19 g/t Au, 63 g/t Ag, 0.37% Pb, 1.2% Zn and 0.3% Cu (Sample 331928). This trench occurs at the northern end of a 150m long zone of magnetite (±sulphide) veined and chlorite altered volcanics (best assay; 0.3 g/t Au, 19 g/t Ag, 0.32% Pb, 0.4% Zn and 0.04% Cu). Previous sampling by RGC (Purvis et al., 1983) from a trench at the southern end of this trend (not re-located in the current survey) returned 0.5% Cu, 2.3% Pb, 5.5% Zn, 0.8 g/t Au and 115 g/t Ag.

Elsewhere in the mapped area strongly anomalous base metals (Pb-Zn) are restricted to dump samples from the Lake Dora Mine (magnetite±sulphide veining at 387965mE, 5353555mN) and samples from a pit above this adit (best sample; 0.14 g/t Au, 89 g/t Ag, 1.8% Pb, 4% Zn and 0.18% Cu) and to the isolated outcropping galena-fluorite mineralisation in quartz-phyric lava/intrusive at 387720mE, 5355425mN (three samples ranging from 0.3% - 1.1% Pb). Elevated Cu values are more widespread with values of up to 1.4% Cu (from 387900mE, 5354030mN), but, more commonly 0.1-0.4% Cu.

7. CONCLUSIONS & RECOMENDATIONS

7.1 Beatrice Prospect

Results from the work at Beatrice have been encouraging with wide intervals of highly anomalous zinc intersected in two of the four holes drilled during the reporting period (best results of 0.8m @ 8.77% Zn, 2.15% Pb, 105 ppm Ag from 459.3-460.1m in MS10 and 68.4m @ 0.49% Zn, 0.21% Pb and 7.8 g/t Ag from 515m- 583.4m in MS8). Despite the amount of drilling done to date, there remains room (> 400m strike length) in the main Itat Creek zone, footwall to the interpreted Itat Creek Fault, for a zone of significant mineralisation. This zone is currently being tested by DDH MS11 (being drilled underneath MS1). Apart from the large MMI anomaly in the western part of the grid (section 6.1.2), future work at the Beatrice prospect will be dependent on the results of DDH MS11.

An honours project by Marcus Hope (CODES) is due to be completed in November and results from this research may give some added focus to the exploration.

A study on the electrical properties of the Itat Creek Shale (and incidentally any other shales of Western Tasmania) may assist in defining the electrical nature of these spurious responses and consequently result in fewer "false-alarms" leading to drilling of anomalous shale electrical responses. Purchase of a core conductivity meter (approximately $3200) would assist with this task. All core from drillholes at the prospect would be logged and measurements made of the inductive (EM) and galvanic (resistivity from IP surveys) responses. Unfortunately a meter is not readily available that enables chargeable response to be measured easily in hand specimen.

7.2 West Sedgwick.

The top of the Central Volcanic Complex is exposed at the West Sedgwick prospect and this key horizon has been explored spasmodically for over forty years. Despite all the exploration completed here there is still untested near surface potential in the northern area beneath scree and glacial moraine cover. Various geophysical surveys in the southern portion of the prospect has sterilised the potential for a near surface (<150m) conductor however the depth potential (>150m) has only been tested in the Agglomerate Hill and Zig Zag Hill area.

It is recommended that the top of the CVC be MMI sampled with soil samples collected on 200m spaced lines at 25m centres. This programme will involve the rehabilitation and cutting of approximately 46 line kilometres of grid and the collection of 1800 samples for MMI analysis.

In the northern part of the West Sedgwick area the location of the contact between the volcanics and the Owen Conglomerate (Great Lyell Fault) is poorly located. The grid in this area should be mapped before sampling commences to ensure that there is not excessive

sampling over the Owen Conglomerate. There may also be some benefit in using a cheap geophysical technique (VLFEM or SP) to locate the Great Lyell Fault before sampling commences.

7.3 Lake Dora – Lake Spicer.

Mapping and rock chip sampling over this zone have largely confirmed the interpretations and results of previous workers. The overall geology, with no obvious host horizon and mainly Tyndall Group lithologies, the style of alteration, a narrow zone of pervasive, but variable intensity, chlorite±magnetite with minor sulfides, and the nature of the mineralisation, narrow sulphide±magnetite veins, are not consistent with the presence of a large tonnage VHMS orebody of the type Pasminco is targeting in Western Tasmania. No further work can be recommended in the Lake Dora – Lake Spicer area at this time.

8. EXPENDITURE

Total expenditure for all work undertaken by Pasminco Exploration within the Queenstown North Project area (EL's 24/96, 6/98 and 20/98) for the twelve-month period to the end of October 1999 was **$881,047**. A summary of the expenditure breakdown is given below:

Personnel	227,692
Travel and Accommodation	27,037
Geological Consultants	31,075
Geochemical Consultants & Assays	27,325
Geophysical Surveys & Contractors	102,938
Other Contractors	86,040
Drilling Contractors	247,666
Stores & Supplies	9,040
Vehicles Plant & Equipment	4,348
Land	6,045
Computing	3,732
Office	28,014
Administration Fee 10%	80,095
Total Project Expenditure	**$881,047**

9. KEYWORDS & LOCALITY

Keywords

ZINC, LEAD, COPPER, GOLD, MOUNT READ VOLCANICS, GEOCHEMISTRY, GRIDING, DIAMOND DRILLING, CSAMT, IP, DHEM, MMI, TYNDALL GROUP

Location

QUEENSTOWN SK55-5

MT. SEDGWICK, LAKE DORA, SEDGWICK BLUFF, ITAT CREEK, ZIG ZAG HILL, LAKE SPICER

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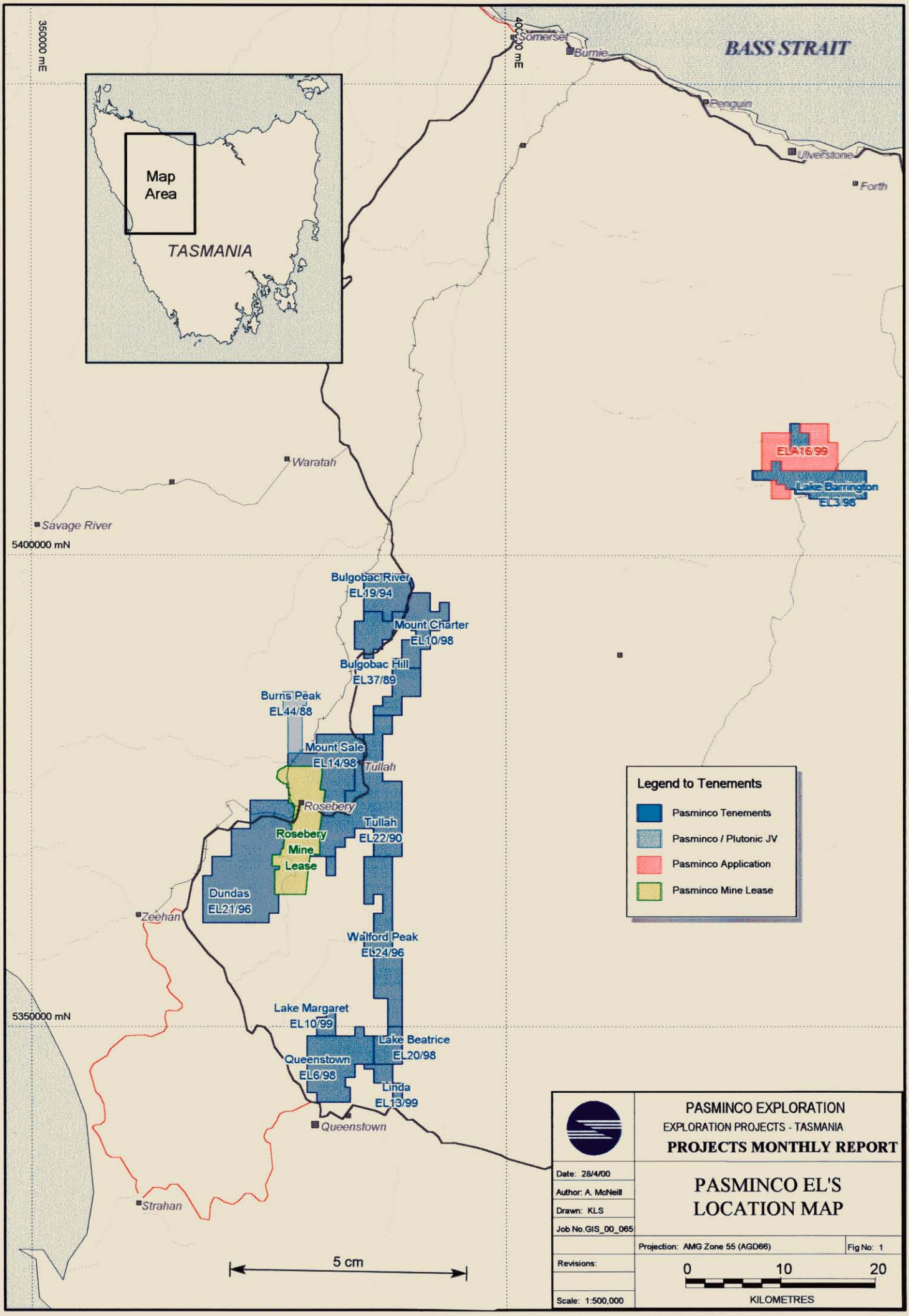
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EL3/96
Bulgobac River
EL19/94
Mount Charter
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Burns Peak
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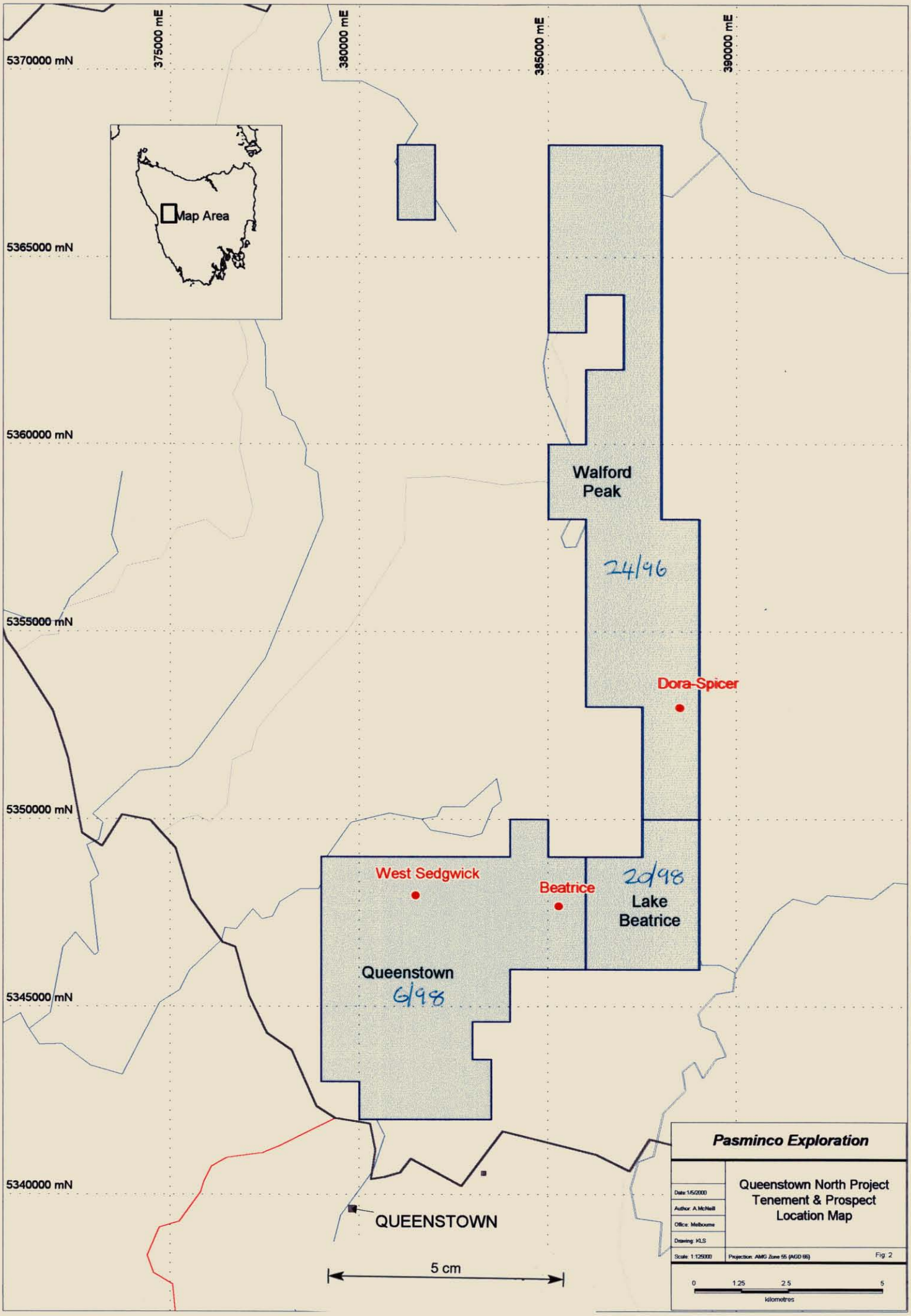
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Beatrice
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Lake Beatrice
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Pasminco Exploration
Queenstown North Project
Tenement & Prospect
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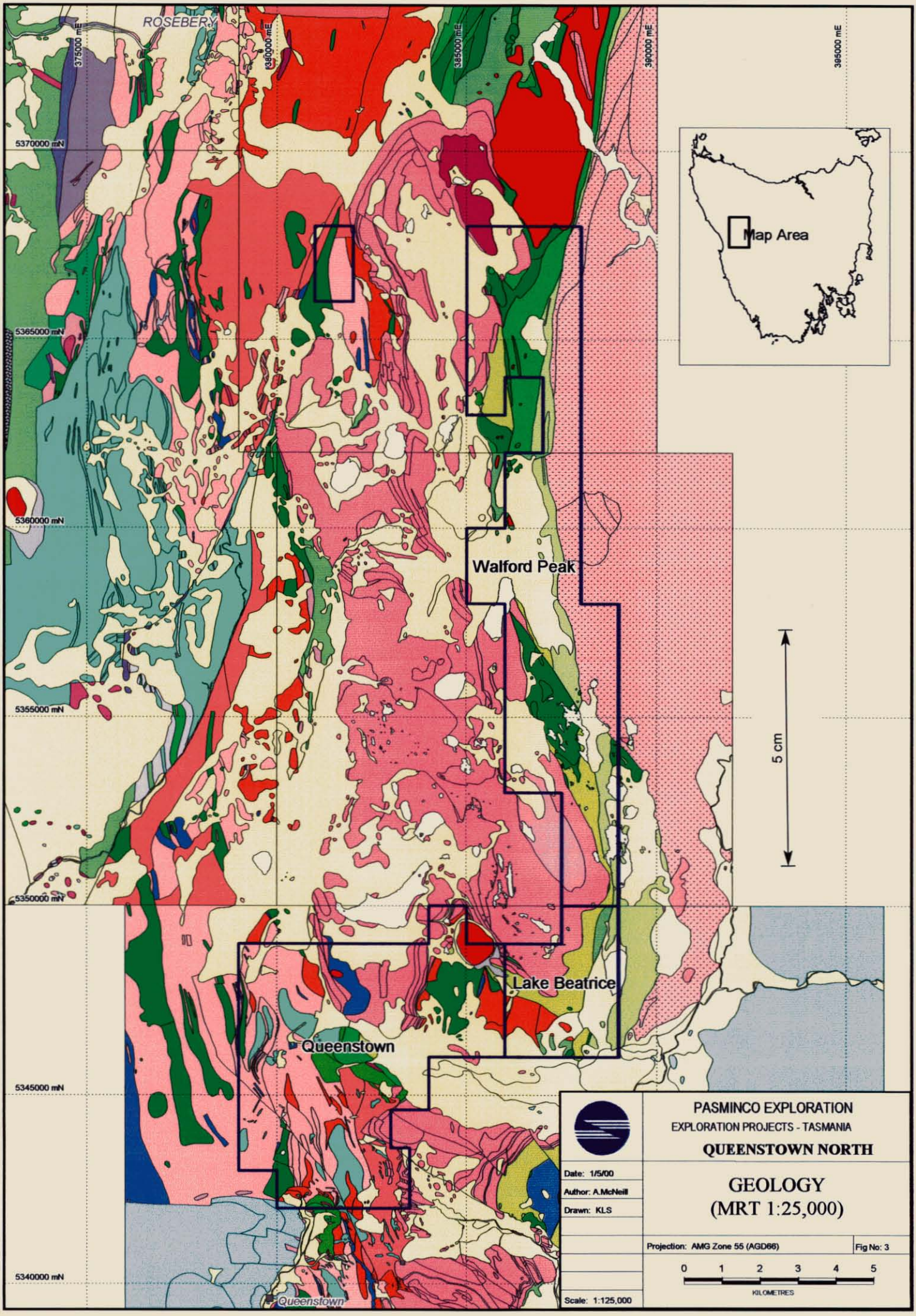
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Map Area
Walford Peak
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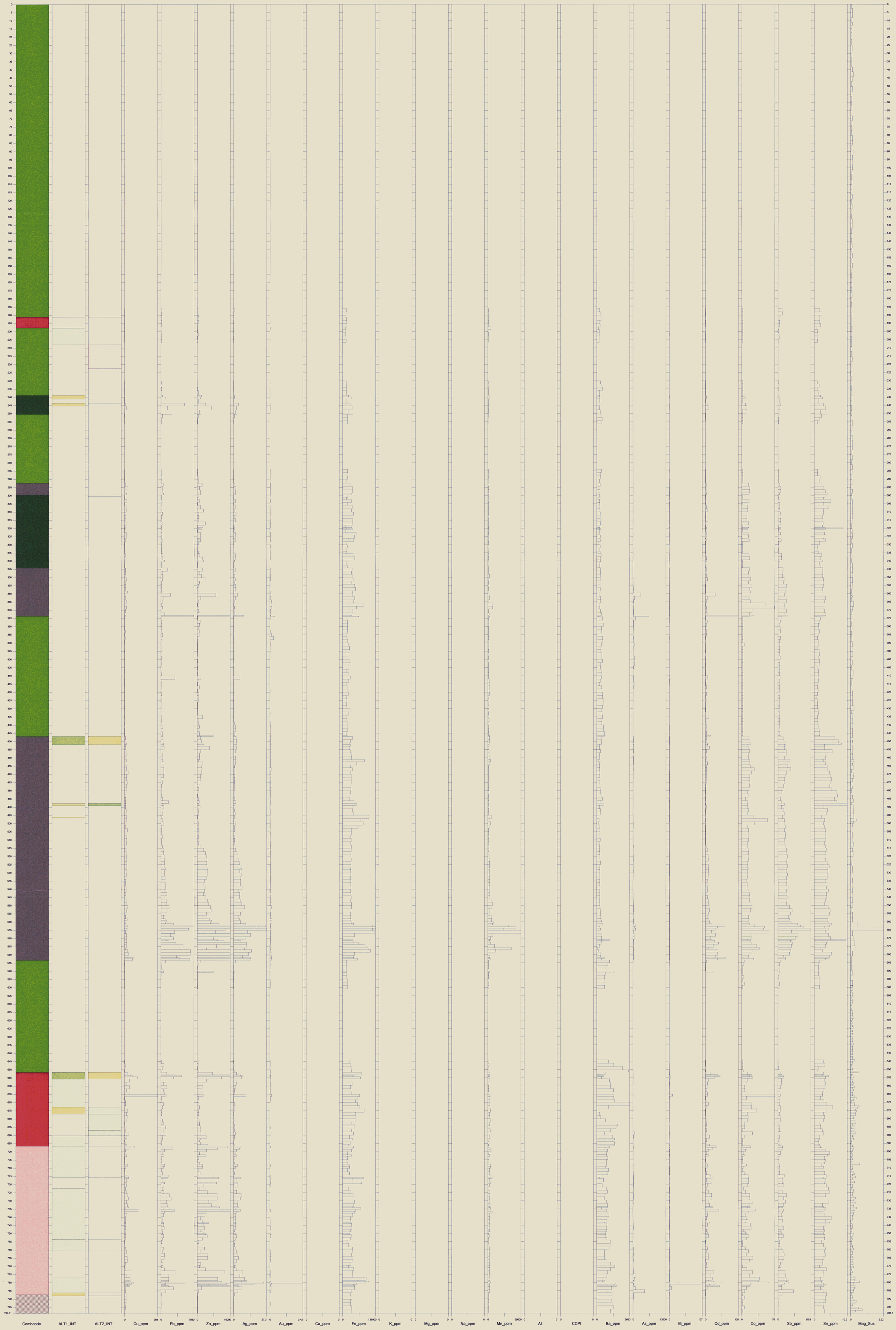


Lithology

- SBH Black Shale
- VNP Qtz Fspar Porphyry
- CMF Mass Flows
- CSI Volcanic Siltstone
- CSA Volcanic Sandstone
- PEP Peperite
- VFD Dacitic Lava
- SGL Glacial Sediments
- VFR Rhyolitic Lava
- VF Felsic Volcanics

Alteration

Chlorite
- moderate
- mod - strong
- strong
- intense

Sericite
- moderate
- mod - strong
- strong

K- Feldspar
- moderate
- mod - strong
- strong

Silica
- moderate
- mod - strong
- strong

Magnetite
- moderate
- mod - strong
- strong

PASMINCO EXPLORATION

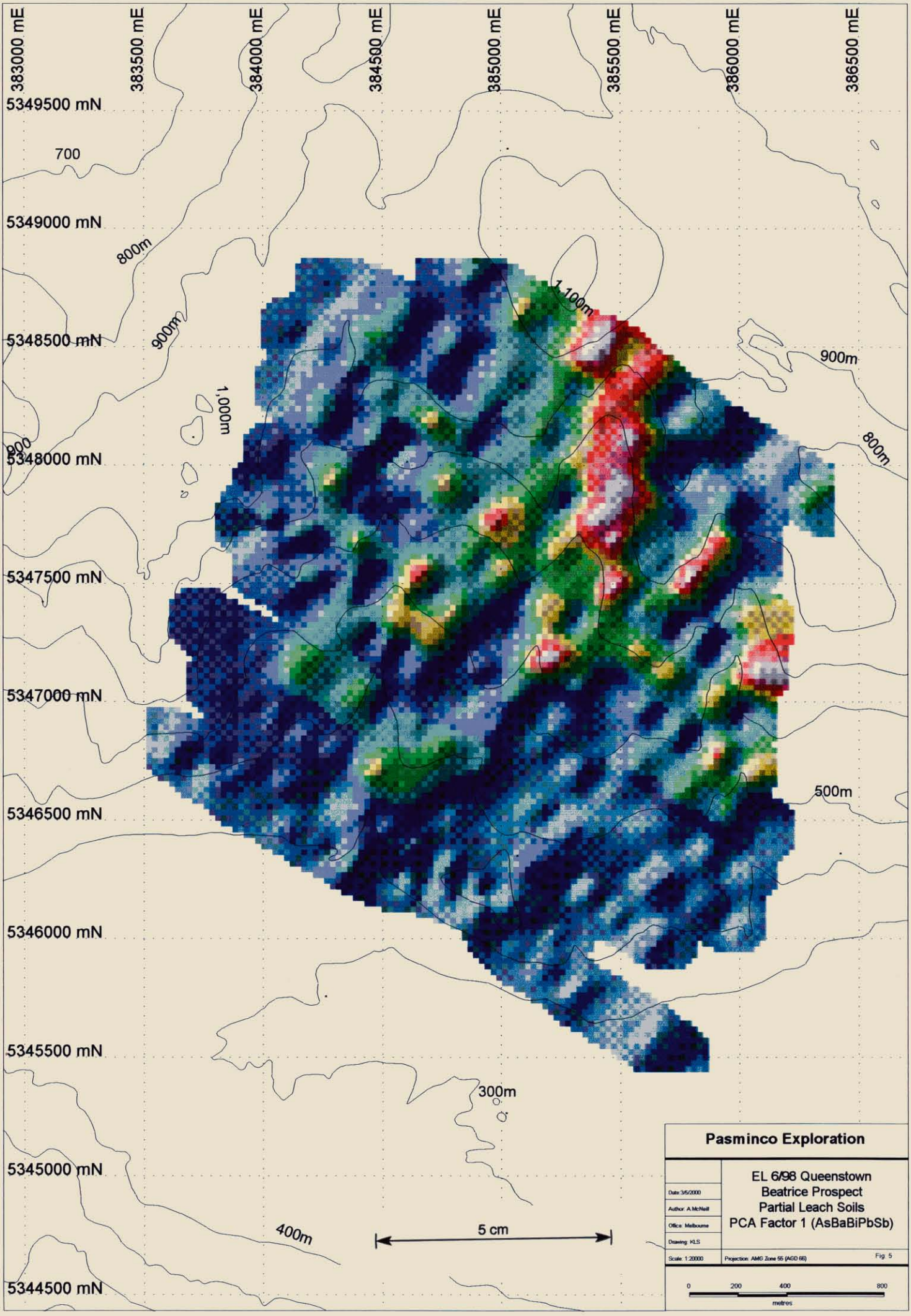
STRIP LOG MS8

Figure 4

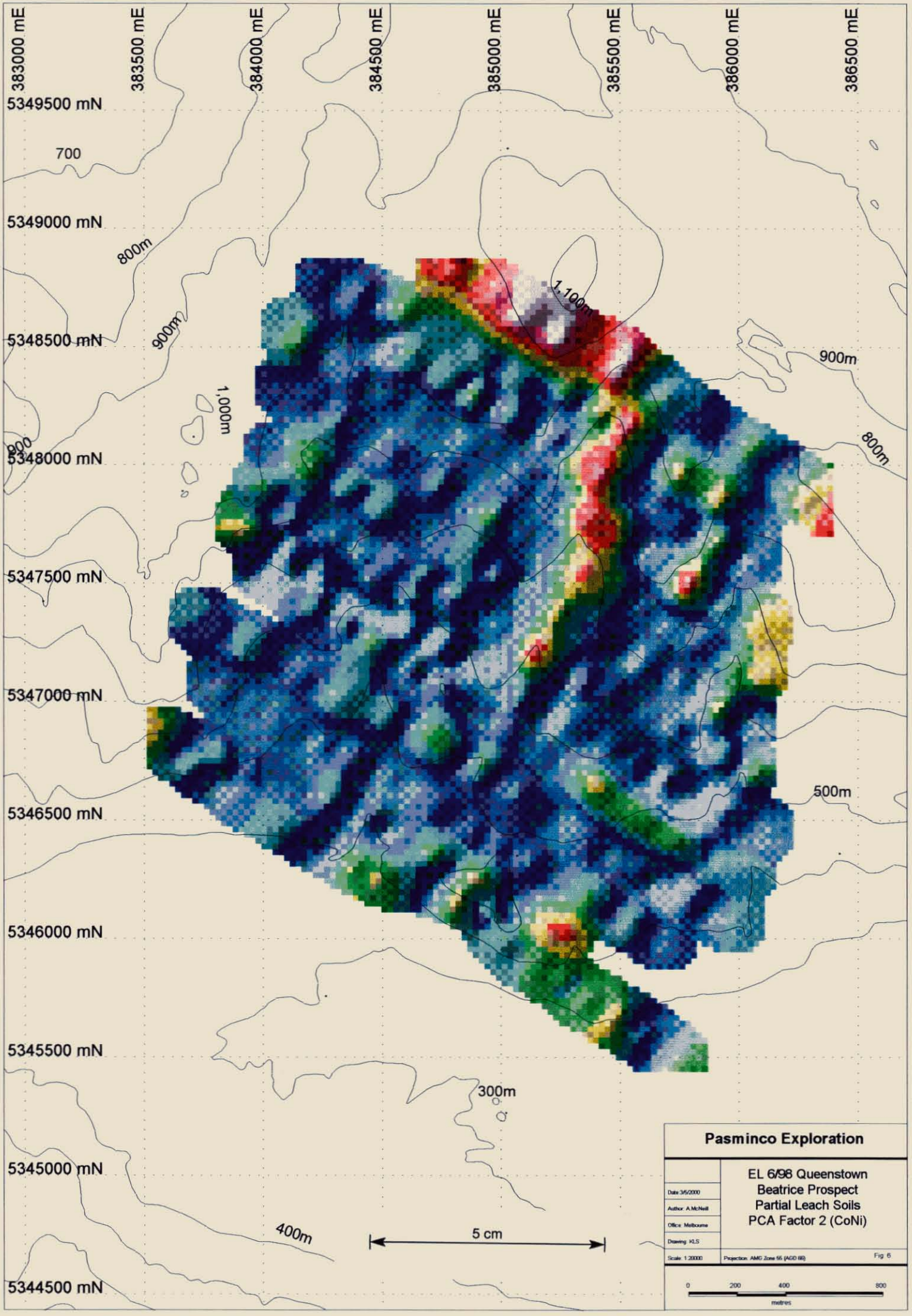
00_4444

645047

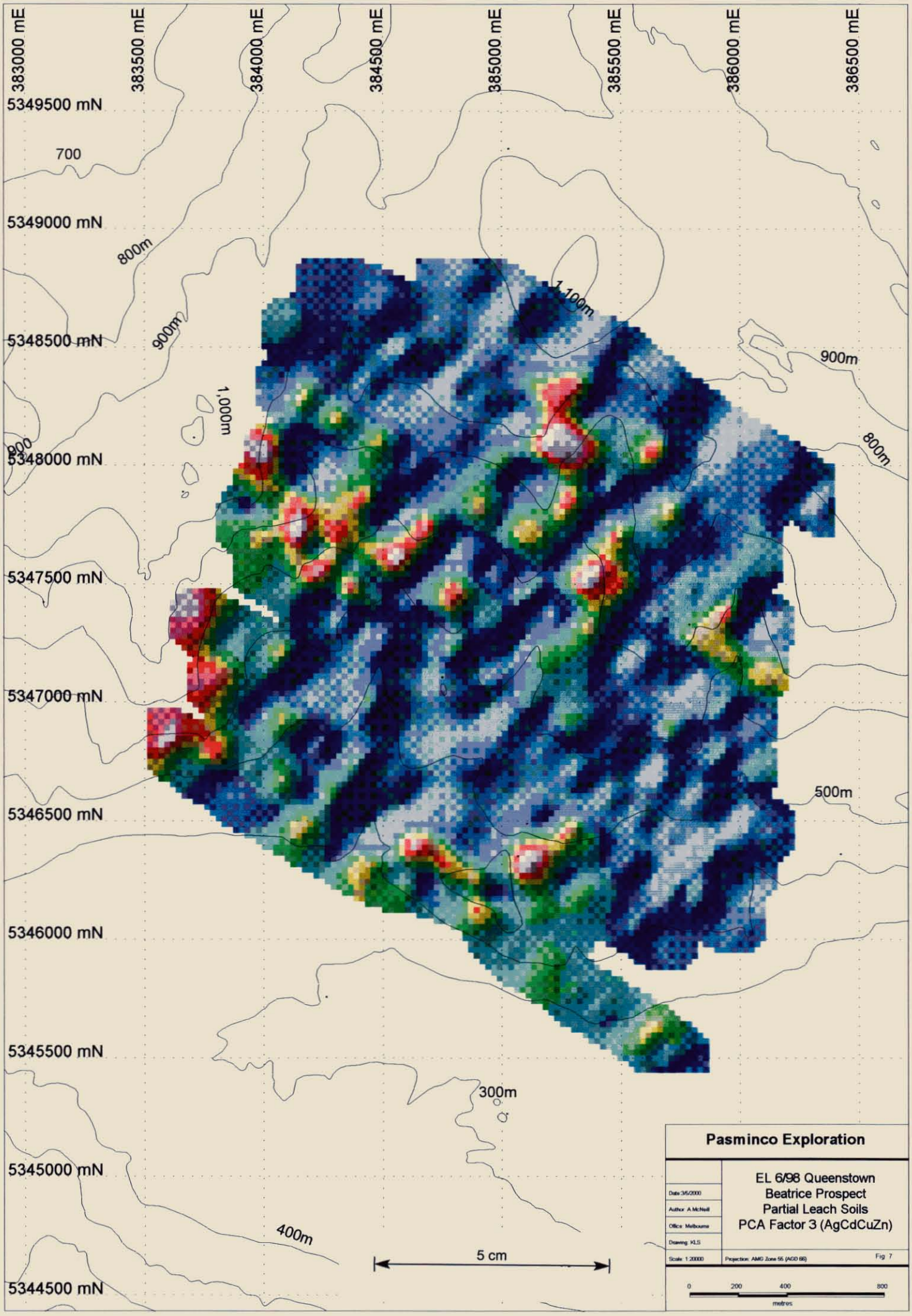
Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL


383000 mE
383500 mE
384000 mE
384500 mE
385000 mE
385500 mE
386000 mE
386500 mE
5349500 mN
5349000 mN
5348500 mN
5348000 mN
5347500 mN
5347000 mN
5346500 mN
5346000 mN
5345500 mN
5345000 mN
5344500 mN
700
800m
900m
1,000m
1,100m
900m
800m
500m
300m
400m
5 cm
Pasminco Exploration
EL 6/98 Queenstown
Beatrice Prospect
Partial Leach Soils
PCA Factor 1 (AsBaBiPbSb)
Date: 3/5/2000
Author: A.McNeill
Office: Melbourne
Drawing: KLS
Scale: 1:20000
Projection: AMG Zone 55 (AGD 66)
Fig. 5
0
200
400
800
metres

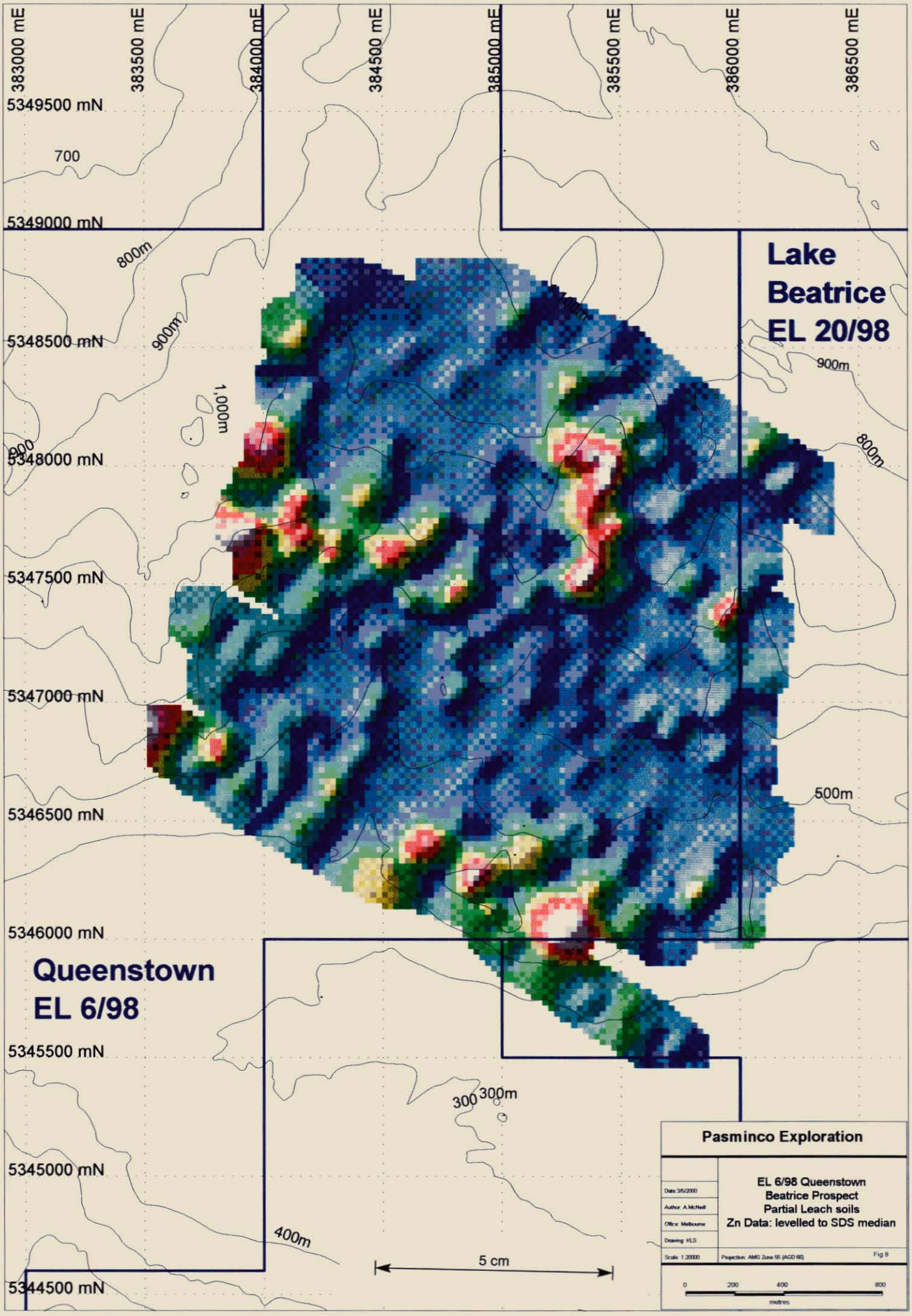
645048


383000 mE
383500 mE
384000 mE
384500 mE
385000 mE
385500 mE
386000 mE
386500 mE
5349500 mN
5349000 mN
5348500 mN
5348000 mN
5347500 mN
5347000 mN
5346500 mN
5346000 mN
5345500 mN
5345000 mN
5344500 mN
700
800m
900m
1,000m
1,100m
900m
800m
500m
300m
400m
5 cm
Pasminco Exploration
EL 6/98 Queenstown
Beatrice Prospect
Partial Leach Soils
PCA Factor 2 (CoNi)
Date: 3/5/2000
Author: A.McNeill
Office: Melbourne
Drawing: XLS
Scale: 1:20000
Projection: AMG Zone 55 (AGD 66)
Fig: 6
0
200
400
800
metres

645049


383000 mE
383500 mE
384000 mE
384500 mE
385000 mE
385500 mE
386000 mE
386500 mE
5349500 mN
5349000 mN
5348500 mN
5348000 mN
5347500 mN
5347000 mN
5346500 mN
5346000 mN
5345500 mN
5345000 mN
5344500 mN
700
800m
900m
1,000m
1,100m
900m
800m
500m
300m
400m
5 cm
Pasminco Exploration
EL 6/98 Queenstown
Beatrice Prospect
Partial Leach Soils
PCA Factor 3 (AgCdCuZn)
Date 3/5/2000
Author A McNeill
Office Melbourne
Drawing KLS
Scale 1:20000
Projection: AMG Zone 55 (AGD 66)
Fig 7
0
200
400
800
metres

645050


383000 mE
383500 mE
384000 mE
384500 mE
385000 mE
385500 mE
386000 mE
386500 mE
5349500 mN
5349000 mN
5348500 mN
5348000 mN
5347500 mN
5347000 mN
5346500 mN
5346000 mN
5345500 mN
5345000 mN
5344500 mN
700
800m
900m
1,000m
1,100m
900m
800m
500m
300
300m
400m
Lake
Beatrice
EL 20/98
Queenstown
EL 6/98
5 cm
Pasminco Exploration
Date 3/5/2000
Author A.McNeil
Office Melbourne
Drawing KLS
Scale 1:20000
EL 6/98 Queenstown
Beatrice Prospect
Partial Leach soils
Zn Data: levelled to SDS median
Projection: AMG Zone 55 (AGD 66)
Fig 8
0
200
400
800
metres

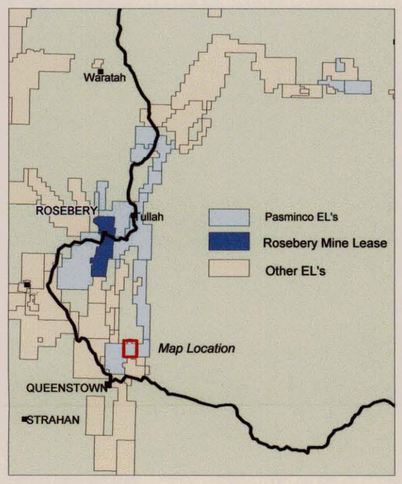
385300 mE
385400 mE
385500 mE
385600 mE

5348100 mN
5348000 mN
5347900 mN
5347800 mN
5347700 mN
5347600 mN
5347500 mN
5347400 mN

MS4
350.0m
MS10
656.4m
MS1
329.1m
MS3
328.0m
MS2
301.0m

Flat Creek Fault

70 30
78
72
72 81
78
55 82
62
80
80
65
80
80
70
80
70
70
65
72
60
65



Geology

- Central Volcanic Complex
- Black Shale
- Coarse volcaniclastic
- Black Slate
- Sericite altered ashy volcanic (some coarse sandstone)
- Flow banded feldspar phyric lava
- Crystal pumice sandstone to siltstone
- Crystal pumice lithic conglomerate to sandstone.
- Volcanic Conglomerate
- Crystal pumice sandstone to siltstone

Structural Symbols

- strike and dip of bedding 62
- strike and dip of cleavage
- strike and dip of bedding, facing known

Topography

- Tenement
- Vehicular Track
- Forestry O/r
- Digitised Tracks (Pasminco)
- Water Course
- Index Contour
- Intermediate Contour

00_4444

Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

N

645052

5 cm

Source: Geology - K.Denwer, pasminco Exploration, 1999
Access, Drainage, Contours - Mineral resources Tasmania

PASMINCO EXPLORATION

Author: K.Denwer
Date:24/11/1999
Plan No: 1
Drawn: L. Gazis
Office: Melbourne

Ref: GIS-99_205
Projection: Transverse Mercator (Zone 55)
Datum: Australian Geodetic Datum(1984)
Ellipsoid: Australian National Spheroid

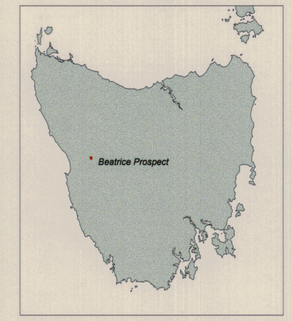
TASMANIA
Queenstown EL 6/98

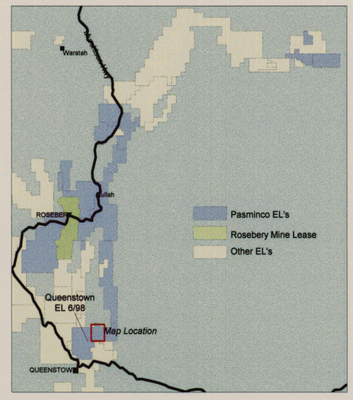
BEATRICE PROSPECT

ITAT CREEK AREA
Interpreted Area

Scale: 1:1000

20 0 20 40 m





5349500 mN
5349000 mN
5348500 mN
5348000 mN
5347500 mN
5347000 mN
5346500 mN
5346000 mN
383500 mE
384000 mE
384500 mE
385000 mE
385500 mE
386000 mE

Lake Adam

EL 6/98
QUEENSTOWN

Itat Creek Map Location (Plan 1)

Lithology

- Quaternary
- Jurassic Dolerite
- Permian Tillite
- Owen Conglomerate
- Zig Zag Hill Formation
- Cambrian Volcanics
- Cambrian Black Shale
- Quartz Feldspar Porphyry

Structure

- Geological contact
- Geological contact - inferred
- Shear
- Fault

Structural Symbols

- Strike and dip of cleavage
- Strike and dip of bedding, facing unknow
- Strike and dip of bedding, facing known

Topography

- Pasminco EL Boundary
- Vehicular Track)
- Forestry O/r
- Digitised Tracks (pasminco)
- Water Course
- Index Contour
- Intermediate Contour

00_4444

Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

N

645053

5 cm

Source : Geology - K. Denwar, Pasminco Exploration, 1999; Access, Drainage, Contours - Mineral Resources Tasmania

PASMINCO EXPLORATION

Author: K.Denwer
Date: 4/11/1999
Plan No: 2
Drawn: F.Brown
Office: ETS

Ref: GIS_99_205
Projection: Transverse Mercator z55
Datum: AGD 1984
Ellipsoid: Australian National

TASMANIA
Queenstown EL 6/98

BEATRICE PROSPECT

Interpreted Geology

Scale: 1:5000

100 0 100 200 m

386500 mE
387000 mE
387500 mE
388000 mE
388500 mE
389000 mE
5356000 mN
5355500 mN
5355000 mN
5354500 mN
5354000 mN
5353500 mN
5353000 mN
5352500 mN
5352000 mN

LEGEND

Cambro - ordovician:

- Ocg — Owen Conglomerate - pink siliciclastic sandstone and conglomerate

Cambrian:

- Vcg — Volcaniclastic Conglomerate. (Dora Conglomerate): Massive pebble to cobble conglomerate. Rounded clasts dominated by quartz-phyric volcanics with lesser quartzite (Precambrian) and quartz-sandstone/ conglomerate. (Sticht Range Beds)
- Vcss — Volcaniclastic sandstone: (Dora Conglomerate) Quartz-crystal sandstone-rich units within and at base of Dora Conglomerate
- V1 — Massive green grey Quartz-eye volcaniclastic sandstone; Quartz phenocryst-rich (to10mm diameter) rare lithics
- V2 — Massive, grey-green, Quartz-phyric volcaniclastic sandstone-conglomerate. Lithic clasts common (dominantly felsic volcanics but minor quartzite) Weathered rock has knotty appearance. Grades into V1 with decreasing lithic content.
- V3 — Massive to brecciated green-grey Quartz-phyric siliceous volcanic (?lava) Quartz phenocrysts much less abundant and smaller than in V1 and V2.
- V4 — Green-grey feldsapr-quartz-phyric volcaniclastic sandstone; massive, well cleaved; lithic rich in part (felsic volcanics + minor quartzite)
- V5 — Massive orange-green weakly feldspar-phyric siliceous volcanic
- Qfp — Massive to flow banded Pink-green quartz +/- feldspar lava/intrusive
- hbfp — Massive brown-pink-green feldspar-hornblende-phyric intrusive
- Srb — Well bedded grey siliciclastic sandstone with lesser conglmerate and siltstone. Some volcanic clasts near contact with overlying volcaniclastics (Sticht Range Beds)

ALTERATION LEGEND

- Mt. Veined
- Mod-Strong Cl.Altn. (>cl3)
- Py +/- other sulfides
- Hematite altered
- Silica + kfeldspar altered

Structural Symbols

- Strike and dip of cleavage
- Strike and dip of bedding, facing unkno
- Strike and dip of bedding, facing known
- Fault

Topography

- Vehicular track
- Water course
- Index contour

00_4444

645054

Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*

Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

5 cm

PASMINCO EXPLORATION	Author: L.Gazis
	Date: 1/5/2000
	Plan No: 6
	Drawn: L.Gazis
	Office: ETS
Ref: GIS_00_007	
Projection: Transverse Mercator z55	
Datum: AGD 1984	
Ellipsoid: Australian National	

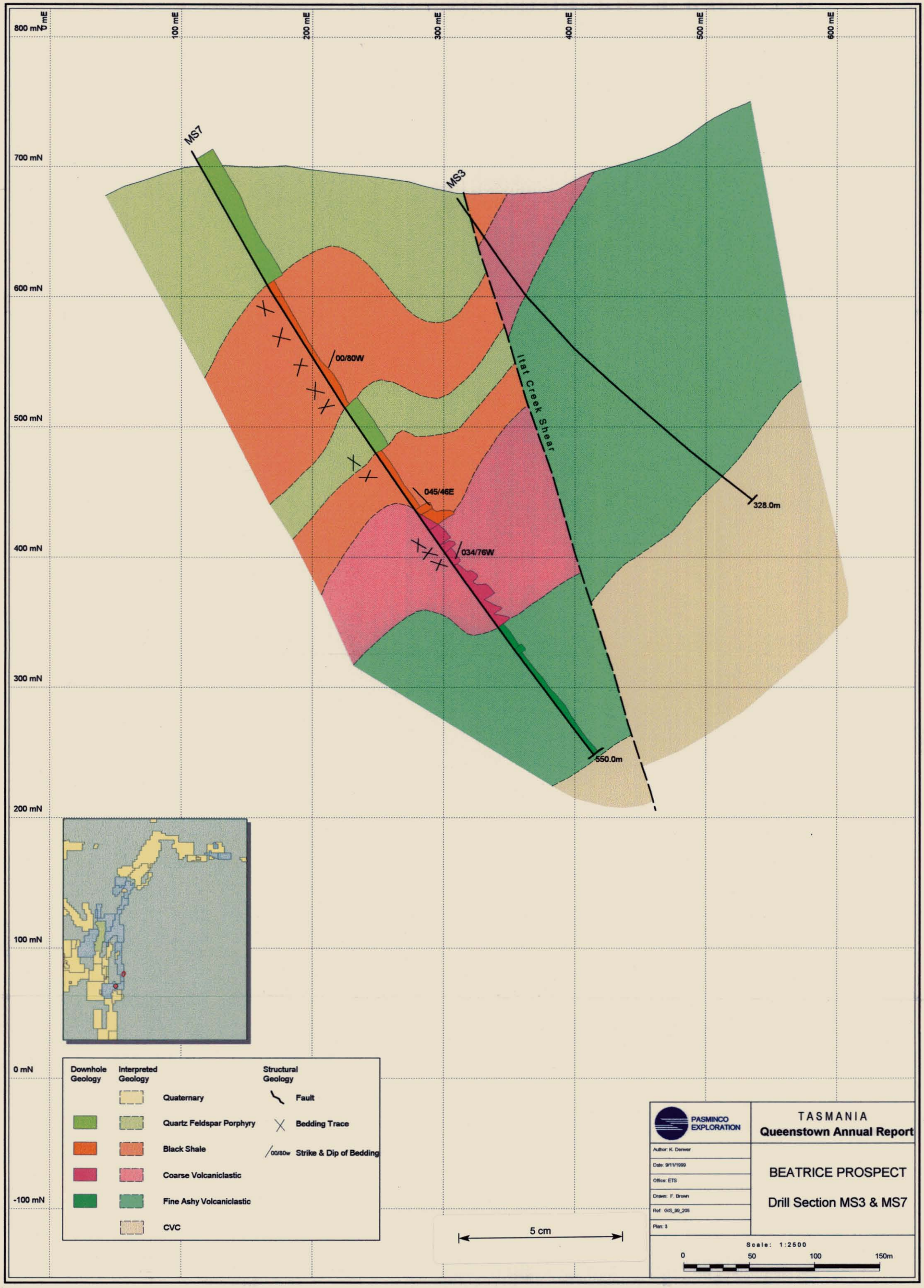
TASMANIA
Queenstown EL 6/98

LAKE DORA PROSPECT

Outcrop Geology

Scale 1:5000

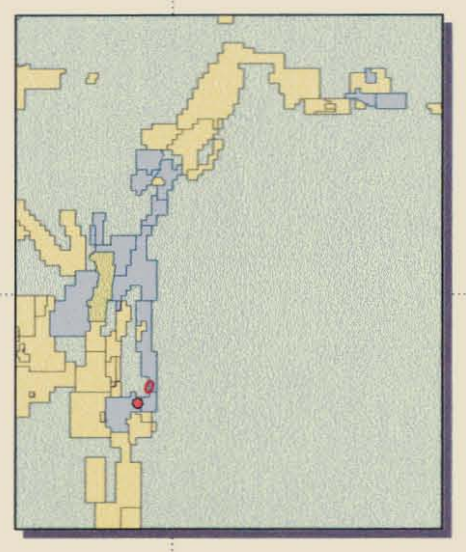
0 100 200 300
METRES


800 mN
0 mE
100 mE
200 mE
300 mE
400 mE
500 mE
600 mE
700 mN
600 mN
500 mN
400 mN
300 mN
200 mN
100 mN
0 mN
-100 mN
MS7
MS3
00/80W
045/46E
034/76W
Ital Creek Shear
328.0m
550.0m
Downhole Geology
Interpreted Geology
Structural Geology
Quaternary
Quartz Feldspar Porphyry
Black Shale
Coarse Volcaniclastic
Fine Ashy Volcaniclastic
CVC
Fault
Bedding Trace
00/80w Strike & Dip of Bedding
5 cm
PASMINCO EXPLORATION
TASMANIA
Queenstown Annual Report
Author: K. Denwer
Date: 9/11/1999
Office: ETS
Drawn: F. Brown
Ref: GIS_99_205
Plan: 3
BEATRICE PROSPECT
Drill Section MS3 & MS7
Scale: 1:2500
0
50
100
150m

645055

200 mE 300 mE 400 mE 500 mE 600 mE 700 mE 800 mE

1000 mN 900 mN 800 mN 700 mN 600 mN 500 mN 400 mN 300 mN 200 mN 100 mN



387.5M

MS-9

Pepperite

MS-8

250/78S

005/20E

010/20E

Itat Creek Fault

798.7m

Downhole Geology	Interpreted Geology		Structural Geology	
		Quaternary		Fault
		Quartz Feldspar Porphyry		Bedding Trace
		Black Shale	00/80w	Strike & Dip of Bedding
		Coarse Volcaniclastic		
		Fine Ashy Volcaniclastic		
		CVC		

5 cm

PASMINCO EXPLORATION

TASMANIA
Queenstown Annual Report

Author: K. Denwer
Date: 9/11/1999
Office: ETS
Drawn: F. Brown
Ref: GIS_99_205
Plan: 4

BEATRICE PROSPECT

Drill Section MS8 & MS9

Scale: 1:2500

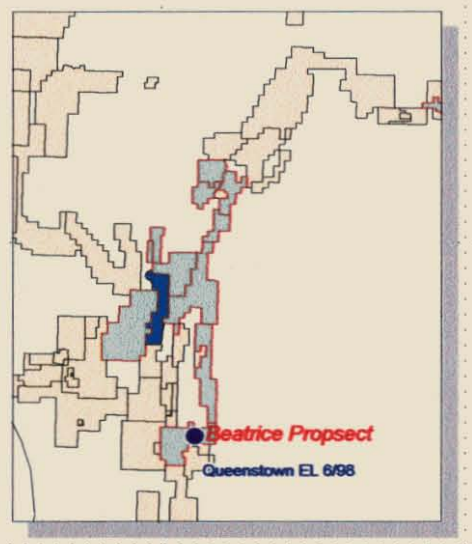
0 50 100 150m

645056

-200 mE -100 mE 0 mE 100 mE 200 mE 300 mE 400 mE

800 mN
700 mN
600 mN
500 mN
400 mN
300 mN
200 mN
100 mN

MS-10



Itat Creek Fault

SO 54-340

54-300

70-316

62-256

656.4m

Downhole Geology / Interpreted Geology

- Quaternary
- Quartz Feldspar Porphyry
- Black Shale
- Coarse Volcaniclastic
- Fine Ashy Volcaniclastic
- CVC

Structural Geology

- Fault
- Bedding Trace
- 00/80w Strike & Dip of Bedding

5 cm

PASMINCO EXPLORATION

TASMANIA
Queenstown Annual Report

Author: K.Denver
Date: 15/11/1999
Office: Melbourne
Drawn: L.Gazis
Ref: **Plan 5**
Projection:

BEATRICE PROSPECT

Drill Section MS10

Scale: 1:2500

25 0 25 50 m

645057

386500 mE
387000 mE
387500 mE
388000 mE
388500 mE
389000 mE
5356000 mN
5355500 mN
5355000 mN
5354500 mN
5354000 mN
5353500 mN
5353000 mN
5352500 mN
5352000 mN

331966-70
331965
331935-37
331926
331938
331933-34
331939-41
331918-20
331931-32
331960-62
331923
331963
331927-28
331929-30
331924-25
331964
274749
274750
274751-52
331917
331916
331913
331914
331912
331911
331915
331910
331901
331922
274742-43
331906
331907
331921
331902-5
331908-09
331942
331971

Samples

- Rock Chip Samples

Old Workings

- pit
- shaft
- trench
- adit

Topography

- Vehicular Track
- Water Course
- Index Contour

00_4444

645058

Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*

Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

5 cm

PASMINCO EXPLORATION

Author: L.Gazis	
Date: 1/5/2000	
Plan No: 7	
Drawn: L.Gazis	
Office: ETS	
Ref: GIS_00_007	
Projection: Transverse Mercator z55	
Datum: AGD 1984	
Ellipsoid: Australian National	

TASMANIA
Queenstown EL 6/98

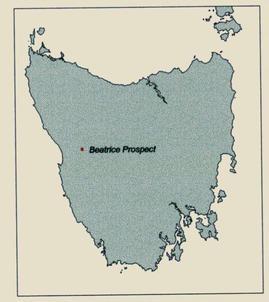
LAKE DORA PROSPECT
Rock-chip sample locations and old workings

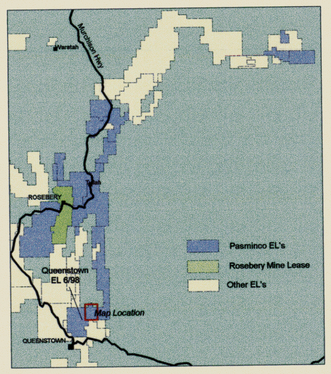
Scale 1:5000

0 100 200 300
METRES

EL 6/98
QUEENSTOWN

Ilat Creek Map Location (Plan 1)





Topography

- Pasminco EL Boundary
- Vehicular Track)
- Forestry O/r
- Digitised Tracks (pasminco)
- Water Course
- Index Contour
- Intermediate Contour
- MMI Sample Location

5 cm

N

00_4444 645059

Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*

Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

Access, Drainage, Contours - Mineral Resources Tasmania

PASMINCO EXPLORATION	Author: A.McNeill
	Date: 1/5/2000
	Plan No: 8
	Drawn: L.Gazis
	Office: ETS
Ref: GIS_00_077	
Projection: Transverse Mercator z55	
Datum: AGD 1984	
Ellipsoid: Australian National	

TASMANIA
Queenstown EL 6/98

BEATRICE PROSPECT

MMI Sample Locations

Scale: 1:5000

100 0 100 200 m

QUEENSTOWN NORTH PROJECT
COMPRISING:
WALFORD PEAK EL 24/96
QUEENSTOWN EL 6/98
BEATRICE EL 20/98

ANNUAL REPORT
FOR THE PERIOD ENDING OCTOBER 1999

Volume 2: Appendices 1-6

of 3

Authors: Kim Denwer
Andrew M°Neill
Chris Dauth

Date: May 2000

Submitted To: Bob Haydon

Copies To: Mineral Resources Tasmania.
Pasminco Exploration, Melbourne
Pasminco Exploration, Rosebery

Melbourne File No: VC 296

00_4444

Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

APPENDIX 1

BEATRICE PROSPECT

Diamond Drill Logs, MS1-MS10

645062

Pasminco Exploration

Drill Hole Summary Report

MS10

Hole Id	MS10	**Project**	QUEENSTOWN	**EOH**	656.40
Type	DD	**Prospect**	BEATRICE	**Commenced**	5/08/99
Year	1999	**Tenement No.**	EL 6/98	**Completed**	17/09/99

Wedge / Extension	**Parent Hole ID**	**Wedge Depth**

UTM East	385348.60	**Local East**		**Dip**	-82.00
UTM North	5347908.40	**Local North**		**True Az (UTM)**	
UTM RL	738.60	**Local RL**		**Mag Az**	302.00
UTM Grid	AMG66_55	**Local Grid**		**Local Az**	290.00
UTM Datum	AGD66				

From	**To**	**DH Type**
0.00	4.50	DD
4.50	56.10	DD
56.10	656.40	DD

Logged by	KPD
Sampled by	AA/CA
Exploration Co.	Pasminco
Drilling Contractor	Diamond Drilling T
Drill Rig	CS1000 P4

Casing Type	40mm cl
Depth From	0.00
Depth To	656.40
Casing Diam.	40mm

Downhole Geophysics

Reason for hole / Target Test centre of PL anomaly west of Itat Ck Fault.

Visible Mineralisation

Best Intersection(s)

Summary Geology

From	**To**	**Lithology**	**Description**

Comments 3m 150mm PVC left as collar

645063

Pasminco Exploration

Drill Hole Summary Report

MS7

Hole Id	MS7	**Project**	QUEENSTOWN	**EOH**	550.00
Type	DD	**Prospect**	BEATRICE	**Commenced**	26/11/98
Year	1999	**Tenement No.**	EL 6/98	**Completed**	20/01/99

Wedge / Extension	**Parent Hole ID**	**Wedge Depth**

UTM East	385088.00	**Local East**		**Dip**	-60.00
UTM North	5347510.00	**Local North**		**True Az (UTM)**	
UTM RL	706.00	**Local RL**		**Mag Az**	60.00
UTM Grid	AMG66_55	**Local Grid**		**Local Az**	48.00
UTM Datum	AGD66				

From	**To**	**DH Type**
0.00	6.50	DD
6.50	140.20	DD
140.20	550.00	DD

Logged by	KD
Sampled by	
Exploration Co.	Pasminco
Drilling Contractor	Diamond Drilling T
Drill Rig	CS1000

Casing Type	PVC clas
Depth From	0.00
Depth To	550.00
Casing Diam.	40mm

Downhole Geophysics

Reason for hole / Target Test Mineralised sequence beneath porphyry and west of Itat Creek Fault

Visible Mineralisation

Best Intersection(s)

Summary Geology

From	**To**	**Lithology**	**Description**

Comments

Pasminco Exploration — Drill Hole Summary Report

MS8

Hole Id	MS8	**Project**	QUEENSTOWN	**EOH**	798.70
Type	DD	**Prospect**	BEATRICE	**Commenced**	26/01/99
Year	1999	**Tenement No.**	EL 6/98	**Completed**	29/04/99

Wedge / Extension	**Parent Hole ID**	**Wedge Depth**

UTM East	385110.00	**Local East**		**Dip**	-60.00
UTM North	5348260.00	**Local North**		**True Az (UTM)**	
UTM RL	955.00	**Local RL**		**Mag Az**	112.00
UTM Grid	AMG66_55	**Local Grid**		**Local Az**	100.00
UTM Datum	AGD66				

From	**To**	**DH Type**
0.00	3.00	DD
3.00	102.00	DD
102.00	798.70	DD

Logged by	AMcN
Sampled by	AA/CA
Exploration Co.	Pasminco
Drilling Contractor	Diamond Drilling T
Drill Rig	CS1000

Casing Type	40mm cl
Depth From	0.00
Depth To	798.70
Casing Diam.	40mm

Downhole Geophysics

Reason for hole / Target Test ZnCd partial leach anomaly beneath porphyry and west of Itat Creek Fault

Visible Mineralisation

Best Intersection(s)

Summary Geology

From	**To**	**Lithology**	**Description**

Comments 3m HW casing in top of hole

Pasminco Exploration

Drill Hole Summary Report

MS9

Hole Id	MS9	**Project**	QUEENSTOWN	**EOH**	387.50
Type	DD	**Prospect**	BEATRICE	**Commenced**	13/05/99
Year	1999	**Tenement No.**	EL 6/98	**Completed**	16/06/99

Wedge / Extension	**Parent Hole ID**	**Wedge Depth**

UTM East	385107.30	**Local East**		**Dip**	-65.00
UTM North	5348262.20	**Local North**		**True Az (UTM)**	
UTM RL	964.30	**Local RL**		**Mag Az**	290.00
UTM Grid	AMG66_55	**Local Grid**		**Local Az**	278.00
UTM Datum	AGD66				

From	**To**	**DH Type**
0.00	2.00	DD
2.00	62.00	DD
62.00	387.50	DD

Logged by	KPD
Sampled by	AA/CA
Exploration Co.	Pasminco
Drilling Contractor	Diamond Drilling T
Drill Rig	CS1000 P4

Casing Type	40mm cl
Depth From	0.00
Depth To	387.50
Casing Diam.	40mm

Downhole Geophysics

Reason for hole / Target Test coincident IP/CSAMT target in anticline

Visible Mineralisation

Best Intersection(s)

Summary Geology

From	**To**	**Lithology**	**Description**

Comments 2m 150mm PVC left as collar

645066

Pasminco Exploration

Downhole Survey Report

Hole Id	Depth	Dip	Azimuth (True)	Azimuth (Mag)
MS10	0	-82	302	290
MS10	30	-81	296.8	284.8
MS10	60	-81	296.7	284.7
MS10	90	-81	297.6	285.6
MS10	120	-81	302.5	290.5
MS10	150	-81	309	297
MS10	180	-81	318.9	306.9
MS10	210	-80	327.5	315.5
MS10	240	-80	335.2	323.2
MS10	270	-79	344	332
MS10	300	-79	346	334
MS10	330	-79	349.4	337.4
MS10	360	-77	358.1	346.1
MS10	390	-76	5	353
MS10	420	-75	5.6	353.6
MS10	450	-75	6.5	354.5
MS10	480	-74	8.6	356.6
MS10	510	-73	11.4	359.4
MS10	540	-73	13	1
MS10	570	-72	15.3	3.3
MS10	600	-70	18.3	6.3
MS10	630	-68	19.7	7.7
MS10	648	-68	21.1	9.1
MS7	0	-60	60	48
MS7	62	-61	63	51
MS7	122.2	-61	65	53
MS7	176	-57	66.5	54.5
MS7	239	-56	65	53
MS7	308	-56	66	54
MS7	371	-55	67	55
MS7	427	-54	66	54
MS7	506	-53	68	56
MS7	550	-52	69	57

Hole Id	Depth	Dip	Azimuth (True)	Azimuth (Mag)
MS8	0	-60	112	100
MS8	29	-61	113	101
MS8	100	-61	116	104
MS8	150	-61	117.5	105.5
MS8	250	-61	117.5	105.5
MS8	300	-61	119	107
MS8	350	-61	119	107
MS8	400	-60	122	110
MS8	450	-60	122	110
MS8	500	-60	122	110
MS8	550	-60	121	109
MS8	607	-60	121	109
MS8	650	-59	122	110
MS8	700	-59	121	109
MS8	750	-59	123	111
MS8	798	-58	122	110
MS9	0	-65	290	278
MS9	31	-65	290	278
MS9	62	-64	290	278
MS9	100	-64	286	274
MS9	152	-64	286	274
MS9	199.8	-64	284	272
MS9	251	-64	287	275
MS9	305	-64	290	278
MS9	353	-64	290	278

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 1	Project	Q'Town
Hole_Type	BQ core	Tenement_No.	EL 6/98
Year	79	Prospect	Beatrice
Geologist	KDD	Date	29/7/98

1/9

Depth	Lithology: Code	Lithology: Colour	Comments	Alteration: Up to 3 codes w. intensities (1-3)	Mineralisation: Up to 3 codes with %	Graphic Log		
			0.0 – 19.3m. yellow brown, cemented altered volcaniclastics. Some portions are cut my a series of 030° to VCA pyrolusite veinlets? (So //?) ± 1mm.					
10								
20			19.3 – 68.4m.					
			Green Ashy volcaniclastics,					
			From 30 – 41m weak cementation leaves remnants green chlorite spots,					
30								
40								

Additional sampling in this hole: 120 – 196.7m, (38 samples)
200 – 240m (20 samples)
250 – 280m (15 samples)

645067

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS7	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

2/9

Depth	Lithology Code	Lithology Colour	Comments	Se Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 1 2 4 8 16	Structure preferred old drill	Structure preferred old field
50							So/UCA = 35°	
60								
70			* Best BMS grades, blebs of galena and dark red Sphalerite to 4mm, some has been remobilized into 5-10mm gashes. ~ 68.4-95.9m Sought graded mass flow unit. Large green-yellow elongate clasts (fiamme) to 30mm, grey-pink silicified rhyolite clast in a feldspar rich matrix of crystal mixture.			≈ ≈ ≈ ≈ ≈	foliated, slightly more sericitic.
80								

645068

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 1	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

3/9

Depth	Lithology			Alteration	Mineralisation	Graphic Log		
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	2 4 8 16 32	Structure	
90								
100			95.9 - 109.5m. Fine grained ashy volcaniclastic rock sericitic alteration.			rhyolite; fiamme.		
110			109.5 - 136.8m.		5mm cal/qz veinlet; cal + py, sph.			
120			feldspar (+/hbl) lithic crystal flow, graded, tuff with silicified rhyolite clasts (1-10mm) abundant feldspar +/hbl and minor fiamme.	mod sericite	5mm gal/sph/py; 30cm 5mm massive sulfide		broken core - minor fault	

645069

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 1	Project
Hole_Type		Tenement_No.
Year		Prospect
Geologist		Date

Predir 274
Skarple #

4/9

Depth	Lithology Code	Colour	Comments	Alteration Up to 3 codes w intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 1 2 4 16 32		
	901							
	902							
	903							
	904							
130	905							
	906							
	907							
	908							
	909		136.8 – 148.0 m as above					
140	910							
	911							
	912							
	913							
	914					lst		
	915		145.0 – 196.4 m.					
150			Interbedded fine and medium grained volcaniclastics,					
	916		no pink rhyolite clasts,					
	917		no or minor quartz.			lst		
	918							
	919							
160	921							

645070

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 1	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

5/9

Depth	Lithology Code	Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 2 4 16 74	preserved mat. feed	preserved mat. feed
	922							
	923							
	924							
	925							
170	926							
	927							
	928							
	929							
	930							
180	931							
	932							
	933							
	934							
	935							
190	936							
	937	192						
	938	194						
	939	196.7m	196.6 - 198.8 m. well sorted volcanic sandstone, sl. Q clast to 2mm. So to 020					
200			198.8 - 288.0 pyritic black shale					

graphic log: rhyolite 913.

This unit is similar to black silts at the CVC / white Spur formation contact at Hercules and White Spur and is identical to the unit from 43.2 - 52.9m in MS 4 drillog

645071

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

6/9

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log		
	Code	Colour		Up to 3 codes w. Intensities (1-3)	Up to 3 codes with %	1 2 4 16 32	Structure	
210								
220			216.0-237.0m. grey shale,				So VCA=0°	
230							So VCA=0°	
240			} strongly pyritic 237.0-243.1m. crystal Lithic volcaniclastic sandstone,					

645072

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 1	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

7/9

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log		
	Reversely Stippled.		with fragments including black shale to 8mm in a crystal (feldspar) matrix.					
			243.1m - 245.3m richly pyritic black shale.					
			245.3 - 248.7m qtz-feldspar phyric intrusive.					
250			248.7 - 272.0m					
			graphitic black shale; minor zones of broken core, but no major shear zone.					
			← change to V(A= 035°.					
260								
			* 266.3m: black shale geochemistry					
270								
			272.0 - 329.1m					
			qtz-feldspar phyric intrusive, minor intermixing over 10cm at contact					
280								

645073

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

8/9

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log		preferred std field	preferred std field
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1	9 16 17		
						✓			
						✓			
						✓			
						✓			
297						✓			
						✓			
						✓			
						✓			
						✓			
300						✓			
						✓			
						✓			
						✓			
						✓			
310						✓			
						✓			
						✓			
						✓			
						✓			
320						✓			

645074

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 1	Project
Hole_Type	Tenement_No. 6/98
Year	Prospect
Geologist KCD	Date

9/9

Depth	Lithology			Alteration	Mineralisation	Graphic Log		
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	2 4 16 20	preferred old field	preferred old field
						329.1m (EOH)		

645075

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS2	Project Q'town
Hole_Type BQ Core	Tenement No. EL 6/98
Year 1979	Prospect Bentrive
Geologist KPD	Date 21/7/98

1/8

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 1 2 4 16 32	preferred old field	preferred old field
			0.0 – 25.6 m. Coarse glacials, predominantly quartz-feldspar porphyry.					
10								
20								
			25.6 – 36.4 m. Black shale, Woolly pyritic black shale, * Poorly sampled.					
30								
			36.4 – 50.4 m quartz-feldspar porphyry, minor shale inclusions		qtz-carb			
40								

This hole is being sampled for 133.9-

645076

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 2	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

2/8

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log		
			coarsely breccated - black shale fragments,		pyrite/galena			
50						slate		
			50.4 – 63.0m. badly broken black shale,					
60								
			63.0 – 66.0m S_0/vcA = 50°,			black shale, siltstone,		
			66.0 – 78.9m. black shale * 684 – 073002 black shale geochem ok					
70								
			78.9 – 85.0m					
80								

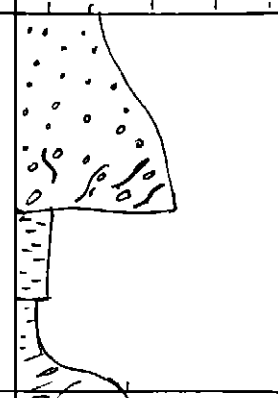
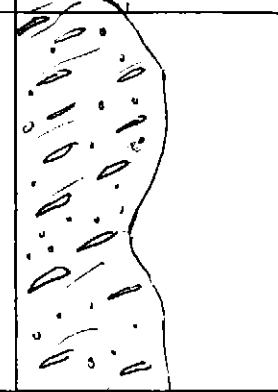
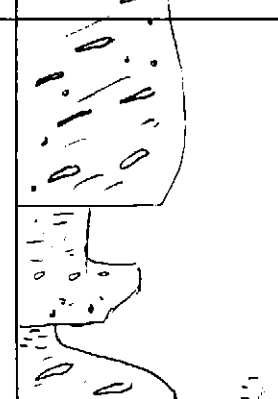
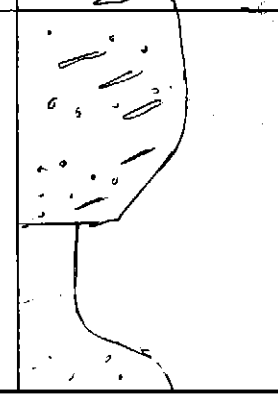
* 63.0 – 66.0m. sheared breccia, pyrite, fine siltstone ? + fine chert to 20mm in a fine clastic matrix.

645077

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 2	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

3/8

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log	preferred std field	preferred std field
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1 2 4 16 32		
			graded feldspar m'stl, coarse sandstone					
			85.0 - 87.4m. black shale.					
			87.4 - 124 graded feldspar, coarse micaceous shale / limestone					
90								
			sandstones → conglomerates.					
			proportion of clastic increases towards base of unit.					
100								
								
110								
								
120								

645078

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS2	Project
Hole_Type	Tenement No.
Year	Prospect
Geologist	Date

4/8

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	Structure	
							Structure	
			124.0 – 165.0m.					
			Fine grained ashy Siltstone, - massive					
130			Variable altered however except for K-feldspar alteration around veins it is weak.					
			133.9m.	Pink K-feldspar		– milky qtz / feldspar vein.	broken core = fault?	
140								
				Pink K-feldspar				
150								
				olive green Sericite. Pink K-feldspar		– qtz / feldspar vein		
160								

645079

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 2	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

5/8

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log		
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1 2 4	Structure	
			165.0 – 208.0m Series of variably graded Volcaniclastic Siltstones + Sandstones				Sv/vca = 65°	
170								
						slate limestone		
180								
190								
						argillaceous siltstone.		
200								

645080

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 2	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

6/8

Depth	Lithology			Alteration	Mineralisation	Graphic Log		
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	2 4		
210			208.0 – 259.9m. crystal lithic sandstone, weakly graded unit, pink rhyolite (aphyric) clast to 6mm plus minor limestone, and locally foreign rich clasts into a weakly sericite altered matrix.			aphyric rhyolite		
220								
230								
240								

645081

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS2	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

3/8

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log	preferred old field	preferred old field
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1 1 4		
250								
260			259.9 - 263.4m.					
			clayey, puggy sericite altered fault.					
270			263.4 - 280.2m.					
280								

645082

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS2	Project	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist		Date	

8/8

Depth	Lithology			Alteration	Mineralisation	Graphic Log		
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %			
			280.2 - 293.0m weakly brecciated mafic dike,					
290								
			293.0 - 301.0m Pink-red K-feldspar altered weakly feldspar phyric dacite lava					
300								
						301.0m (EOH)		

645083

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS3	Project	Q'town
Hole_Type	BQ Core	Tenement_No.	EL 6/98
Year	1979	Prospect	Beatrice.
Geologist	KPJ	Date	21/22/7/98

1/9

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 1 2 4 16 32	preferred std field	preferred std field
10			0.0 – 11.7m Glacials.					
20			11.7 – 32.8m. Series of mudst./claystone, upbole grading; dark rich (red limestone) base, fossiliferous rock central portion and silty (fine sand) tops.			Limestone / Limestone		
30								
40			32.8 – 35.0m grey limestone – interbedded with recrystallized volcanics 35.0 – 46.0m = finely homogeneous sericitic altered fine grained volcanics					

645084

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 3	Project	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	KPD	Date	22/7/98

2/9

Depth	Lithology			Alteration	Mineralisation	Graphic Log	preferred std field	preferred std field
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	2 4 16 32		
50			-46.0 - 50.2m Interbedded ashy volcaniclastics and black shale.					
60			50.2 - 78.0m. poorly - moderately cleaved lithic crystal sandstone. limestone + pink chlorite clasts (typically 3-5mm) but locally to 25mm and wispy brown chloritic zones (foram) in a crystal (feldspar) matrix. Unit is uncleaved from 50.2 - 60m and then moderately cleaved to 78m. This is probably reflecting the foram content.			limestone chlorite.	← So/VCA = 45°	
			78.0 - 96.0m.			Locally bedded	So/VCA =	50°

645085

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 3	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

3/9

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log	preferred old field	preferred old field
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %			
			Mass flow unit, differs to above as 1) more rapid grading, 2) no pink rhyolite clasts, abundant lithic clasts and fragments.			limestone		
90							Sa/VCM = 060°	
			96.0 – 111.5m. feldspar crystal sandstone – siltstone, approximately 20% limestone, but more in finer sections.			limestone,	fine pink rhyolite	
100								
110								
		weakly	111.5 – 150.0m fine grained green-brown ashy volcanic clastics, only weakly altered.					
			Some calcareous? grey breccia clasts, mineralisation associated with this and appears to occur in spaces created by the breccia	K-Spa				
120								

645086

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 3	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

4/9

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log		
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1 2 4		
			Note there is no bm associated with this vein.	K-Sp	9tz. carb veinlet			
			Note Most of the BM in this hole is associated with this one unit.					
130								
					5-10mm 9a/9pt			
140								
150								
			150.0 – 170.0m Note this unit has low BM. Two gneissic units, fine spotted xl meta-sst grading into an 9tz-sericite rock with augen texture					
160								

9tz ser

645087

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

5/9

Hole_ID MS 3	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

Depth	Lithology			Alteration	Mineralisation	Graphic Log		
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %			
170								
180			170.0 – 206.0m. fine grained, mottled green-grey volcaniclastic (not logged in detail).					
190								
200								

645088

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 3	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

6/4

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log		
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %			
210								
220								
230								
240								

645089

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

7/9

Hole_ID MS3	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

Depth	Lithology			Alteration	Mineralisation	Graphic Log		
	Code	Colour	Comments	Up to 3 codes w. Intensities (1-3)	Up to 3 codes with %	1 2 4		
250								
260								
270								
280								

645090

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS3	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

8/9

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log	previous old field	previous old field
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1 2 3		
			2560 - 3280m pink - reddish bleach fine grained (aphyric) unit, locally brecciated with					
290			typically pinkish clasts and darker matrix. [This unit may well supply the pink rhyolite clasts seen elsewhere.]					
300			Interpreted to be a					
			aphyric rhyolite lava.					
310								
320								

64509i

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS3	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

9/9

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log			
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %				
324						328 EOH			

645092

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 4	Project	EL 6/98
Hole_Type	diamond	Tenement_No.	
Year	1980	Prospect	Beatrice
Geologist	KPD	Date	22/7/98

1/9

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 1 2 4 6 3L	STRUCTURE
			0 - 9.0m Glacial Scree.			Dolerite	
10			9.0 - 20.0m. black shale.				
20			20.0 - 29.0m. Well bedded, well sorted Sandstone with lithic/rock, silt/qtz grains and disseminated py.				- So/UCA = 20°,
30			29.0 - 43.7m. pyritic black shale. @ 34.6m. 075odb Black shale gouge				
40							

Sampling

0 - 65m ½ core

65 - 105.6m ~10cm ½ core every metre.

105.6 - 117m ½ core

117 - 139m ~10cm / metre

139 - 154 drillog ½ core

160.75 - 190 ½ core.

645093

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS4	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

2/9

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 1 2 4 16 72	preferred old field	preferred old field
			43.7 - 52.9m Sandy grained sandstone-silt unit. well bedded near top + occasional at base. Interbedded pale + dark units.				So/UCA - 030°	
50			* Identical to the unit at 196.6 - 198.5m in MS1. 52.9 - 58.0m black shale Minor carbonate jigsaw breccia 58.0 - 100.0m.					
60			crystal rich (predominantly feldspar) lithic sandstone					
70			This unit is similar to the unit at 110 - 140m in MS1.					
80								

645094

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS4	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

3/9

Depth	Lithology			Alteration	Mineralisation	Graphic Log		
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1 4 16 32		
90								
100								
110			100.0 – 105.6m grey-black ssL, similar to 43.7-52.9 but not bedded 105.6 – 117.3m. black shale					
120			* 007300J: black shale graphitic. 117.3-142.4m. cream yellow-grey siltstone					

645095

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS4	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

4/9

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log	preferred std field	preferred std field
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %			
130								
140								
150			142.4 - 154.0m shale					
160			154.0 - 160.0m					

645096

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS4	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

5/9

Depth	Lithology			Alteration	Mineralisation	Graphic Log			
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %			preferred std field	preferred std field
			160.0 –						
			See David Boyd's						
			log.						
170									
180									
			@ blue shale geochem						
			sample 073604.						
190									
200									

645097

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS4	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

6/9

Depth	Lithology			Alteration	Mineralisation	Graphic Log			
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %				
210									
220									
230									
240									

645098

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS4	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

7/9

Depth	Lithology			Alteration	Mineralisation	Graphic Log		preferred std field	preferred std field
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %				
250									
260									
270									
280									

645099

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 9	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

8/9

Depth	Lithology			Alteration	Mineralisation	Graphic Log			
	Code	Colour	Comments	Up to 3 codes w intensities (1-3)	Up to 3 codes with %				
290									
300									
310									
320									

645100

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS 4	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

9/9

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log	preferred std field	preferred std field
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	2 4		
330								
340								
350								

645101

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS5	Project	Queanbeyan
Hole_Type		Tenement_No	
Year		Prospect	
Geologist	KPD	Date	5/8/99.

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
0							0.0 – 31.3m Quartz (1 to 4mm), white feldspar laths to 3mm and some agglomerated feldspars and light brown clasts (after hornblende?) porphyry. The matrix is dark grey. Minor sericite associated with quartz		
5									
10									
15									
20									

645102

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS5	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
20									
25									
30									
							31.5–62.7m		
							Black shale with varying proportions of thin 1-2mm white granular (0.2–0.5mm) carbonate and some pyrite (silty limestone)		
35							31.5–41m massive poorly bedded shale. 1% pyrite bands.		
40							Black Shale geochemistry		

332000

645103

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS5	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
40									
							41-52m. dark shale interbedded with sandy limestone beds (20-60%), thin resist contains fine 0.1-0.3mm pyrite predominantly within the limestone parts.		So 47
45									
								So 54	
50							* black shale geochemistry Sample. 073001		
								So 48	
55							52-62.7m. the proportion of white sandy limestone bands decreases downhole, as does the pyrite content.		
								So 77	
60									

645104

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS5	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
60						mm			
							62.7 – 105.8m		
							Dark green, quartz (to 5mm) feldspar/altho (commonly agglomerated to 6-7mm) and hornblende 2-3mm phyric porphyry, well developed pegmatite at top and here → intrusive.		
65									
70									
75									
80									

645105

5/7

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS 5	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
80									
85									
90									
95									
100									

645106

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MSS	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
100						mm			
105									
110							105.8 – 139m massive poorly bedded black shale, minor pyrite on fractures. The amount of thin white limestone beds increases to about 15%.	So / 18	
115								So / 19	
120								So / 008	

645107

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS5	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
120									
							120 - 123.5m qtz-cb,		
125									
								So / 54	
130									
								So / 66	
135									
							* 073002: black shale geochem qtz Sample KPD 5/10/99.	So / 8	
139									

645108

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS6	Project	Queenstown
Hole_Type		Tenement_no	EL 6/98
Year		Prospect	BEATRICE
Geologist	KPD	Date	14/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (1 cm = 4 m)	Comments	Alteration	Mineralisation
							0.0 – 150.5m quartz feldspar porphyry. Quartz to 3-4mm feldspar 1-2mm.		
10									
20									
30									
40									

645109

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS6	Project	Queenstown
Hole_Type		Tenement No	EL 6/98
Year		Prospect	BEATRICE
Geologist	KPD	Date	14/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (1:1 mm 2 4 16)	Comments	Alteration	Mineralisation
50									
60									
70									
80									

645110

3/8

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS6	Project	Queenstown
Hole_Type		Tenement_No	EL 6/98
Year		Prospect	BEATRICE
Geologist		Date	14/10/95

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
80						0 1 mm 2 4 10			
90									
100									
110									
120									

645111

7/8

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS6	Project	Queanbeyan
Hole Type		Tenement No	EL 6/98
Year		Prospect	BEATRICE
Geologist	KPD	Date	14/10/98

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
120						0 1 mm 2 1C			
130									
140									
150									
160							150.5 – 152.0 m. Tuffaceous sediment 152.0 – 165.2 m grey and black slate.		

645112

5/8

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS6	Project	Quartz
Hole_Type		Tenement_No	EL 6/98
Year		Prospect	BEATRICE
Geologist	KPD	Date	14/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
160									
							165.2 – 174.0m. Quartz feldspar lithic mass flow. Crystals are equigranular throughout the unit but lithics become more common and coarser grained downhole, 50cm crush zone/fault at base		
170									
							174.0 – 186.0m. Non-magnetic, pink K-feldspar altered feldspathic sandstone, locally patchy/mottled green = chlorite alteration.	K-Spar Chl	
180									
							186.0 – 210.6m. black shale,	Sp	
190									
200									

645113

drillog

6/8

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS6	Project	Queensland
Hole_Type		Tenement No	EL 6/98
Year		Prospect	SEATRICE
Geologist	RPD	Date	14/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0.1 1 mm 2 4 16)	Comments	Alteration	Mineralisation
200									
210							210.6 – 213.8m major pyg fault.		
							213.8 – 226.2m graded fine sandstone – grit, sericite altered feldspar crystal lithic mass flow. Clasts are dominantly chloritic fine grained volcanic but also include pink rhyolite lava clasts.	Se	
220							The unit is strongly sericite altered.		
							226.2 – 261.0m and 278 – 226.2m partly K-feldspar alteration becomes common downhole		
230									
								Patch K	
240									

645114

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole ID	M56	Project	Queensland
Hole Type		Tenement No	EL 6/98
Year		Prospect	BEATRICE
Geologist	KD	Date	14/10/99.

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
240						0.1 1 mm 2 4 16			
								Se Patchy K	
250									
260									
							261.0 – 266.5m pink fine sandy volcanics, breccia (minipez) and quartz-feldspar chlorite veining, Fault Zone.	K	qtz - Chlorite K-Spar Veins
							266.5 – 388.8m Pale pink feldspar phyric volcanic. 10-15% alteration blebs of carbonate which have oxidized to a brown colour has the appearance of angular clasts	reducing K	
270									
								Ch	
280									

645115

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS 6	Project	Quamby
Hole_Type		Tenement No	EL 6/98
Year		Prospect	BEATRICE
Geologist	KPD	Date	14/10/99.

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
280							288.8 (EOH)		

645116

1/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	Queenstown
Hole_Type	DIAMOND	Tenement No.	EL 6/98
Year	1999	Prospect	Beatrice
Geologist	KPD	Date	6/1/98

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 2 / 4 / 8 / 16	preferred std field	preferred std field
			0.0 - 109.3m.					
			Quartz feldspar phyric porphyry.					
			Large partially resorbed quartz phenocrysts to 5mm and pinkish feldspar typical 2-4mm but occasion crystal clots to 10mm. Less					
5			Hornblende (1%) altered to mica.					
10								
15								
				green				
				chlorite?				
			- Box					
20					0% Imm Qtz-Chl?			

645117

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	O'Leary
Hole_Type	DIAMOND	Tenement No.	EL6698
Year	1999	Prospect	Beatrice
Geologist	KPD	Date	5/1/99

274

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. Intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 2 4		preferred std field	preferred std field
25		301	24-27.5m minor thin brecciated zones. Polylithic clasts to 15mm cemented by Pyrolusite and limonite.	green Chlorite?	QV 15mm Breccia 2 Carb				
		302							
		303							
		304							
30			28.5 - 88.5m. Red Pink altered QFP.	Red Pink	070 Qtz-Carb-Chl?				
35			33.0 - 35.5m similar breccia to 24 - 27.5m.	Feldspar K?	QBS				
40					070 Qtz Chl?				

645118

3/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	O'Toms
Hole_Type	DIAMOND	Tenement No.	EL6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	5/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log		preferred add field	preferred add field
						4			
45			- 43m Fault	Red Pink. K/alt?	40mm 010° carb				
50			48 - 67.5m (minor zones) 3 - 10mm qtz. carb. ± chlorite veining at > 70° VCA		052° 10mm qtz-carb 070°				
55					qtz. carb. chl 077° chl, carb, (hem)				
60			- minor malachite in fractures		075° (20mm) qtz. carb. chl 082° chl, carb, (hem) 20mm chl-qtz. carb				

645119

4/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Olivine
Hole_Type	DIAMOND	Tenement_No.	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	5/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 2 4		preferred old field	preferred old field
					Qtz Carb Py (10mm)				
				Red-Pink					
65			64.5 – 66.4m broken + faulted porphyry	K-feldspar					
			small 10cm breccia zone above and below the fault.		Qtz Py				
70			69.6 - 70.1 & 70.8 - 71.4m faulted and brecciated zone, brecciated cemented by calcrete.						
75									
80					Qtz Carb Chl ser?				

645120

5/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	O'Ahern
Hole_Type	DIAMOND	Tenement_No.	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	5/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log		preserved old field	preserved old field
			* Sample for IP testwork	Red-Pink K-feldspar					
85									
			89.5 - 109.3m relatively unaltered, hornblender still intact	unaltered					
90									
				hornblende still intact.	0% calc-mineral veinlets Breccia Carbonate Sulphide				
95									
100									

645121

6/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	O'Town
Hole_Type	DIAMOND	Tenement_No.	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	5/1/99

274

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	STRUCTURE	
105								
		109.3	minor sericitic alteration at contact, weakly perpendicular, 109.3 - 231.8m					
110		305	black shale.					
			109.3 - 114m disrupted shale, small breccia zones, micro faulted bedding.				50 046	
		306	109.3 - 125.4m : 25% sandstone interbeds.				50 052	
		307					50 056	
115					0.70 Carb			
		308	* black shale geochemistry sample				50 045	
		309					50 050	
			* Sample for IP testwork				50 055	
120		310	Good bedding - fine structures downhole facing.				50 060	

-5°/270

645122

7/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Q'ton
Hole_Type	DIAMOND	Tenement_No.	EL 6/98
Year	1999	Prospect	BERRICE
Geologist	ICD	Date	5/1/99

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log	preferred old field	preferred old field
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	2 4		
		311					50/59	
		312					50/55	
125		313					50/56	
			125.4m – black shale, minor creamy white sediment interbeds				50/62	
		314						
		315			15mm qtz-carb @ 21°			
130							50/76	
		316	25cm shear zone				50/22	
		317					50/45	
135		318						
							50/45	
		319						
		321						
140								

645123

8/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	Q'town
Hole_Type	DIAMOND	Tenement No.	EC 6/88
Year	1999	Prospect	BEMARKS
Geologist	ISPD	Date	5/4/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred std field	preferred std field
		322					50/52	
		323						
145		324						
		325						
		326						
150								
		327	minor sandy units with abundant fine pyrite, uphole facing.				50/36	
		328						
155		329					50/58	
		330			50ma 050 coal/qtz			
160		331					50/78	

140.2m sized down from HQ → NQ

645124

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

9/28

Hole_ID	MS7	Project	Q'town
Hole_Type	DIAMOND	Tenement No.	6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	5/11/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred old field	preferred old field
		332						
					40mm / 37°			
		333	162.9 - 169.0m badly broken and faulted vuggy qtz veined black slate.		Carb-qtz 15mm / 18°			
165		334					50 / 50	
		335						
							50 / 51	
170		336						
		337					50 / 48	
		338			34 / Qtz-Carb			
175		339						
			* Sample for IP testwork				50 / 50	
		341						
							50 / 10	
		342						
180								

645125

10/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	Q'town
Hole_Type	DIAMOND	Tenement No.	6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	5/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred old field	preferred old field
		343			3% Qtz-Carb			
		344						
		345	30mm - coarse framboidal pyrite - carbonate veinlet.		60 Qtz-Carb py/carb 30mm/ 045°			
185		346						
		347	from 184 - 196m reddish sphalerite and minor galena in minor carbonate veinlets (<5mm), blocks shale is tarnished yellow green - altered?	yellow-green tarnish, sericite?	35% Qtz-Carb shale		So 48	
		348						
		349					So 46	
		350				sph - cb/py 189.5m sph	3mm cb/Ank 035	
190		351						
		352				2mm.		
		353				cb-no sph sph 192.4m py	cb/sph 3mm 40	
		354						
		355					So 46	
195		356						
		357				shale 195.7 4mm sph cb-py	55	
		358	- 196.4 - 197.2m - quartz carbonate veined py fault.					
		359	197.8m galena/sph in minor carbonate veinlet.		py-rare			
		361						
200		362		oo	020			

Or 185.1 3mm Cy/Ank x3 357/78W,
185.2 So ? 62/74W,
185.9 So ? 004/83W,
186.7 So? 000/61W,
187.9 So 001/82W,

645126

MS7 orientated core:

Depth	Azimuth (true)	dip	feature
185.1	357	78W	3mm py/qtz(x3)
185.2	62	74W	So?
185.4	167	20E	Cb
185.5	181	82E	Sph,qtz,cb
185.6	351	87W	Sph,qtz,cb
185.8	351	87W	Sph,qtz,cb
185.6	151	15E	2mm Cb
185.7	193	77E	3mm Cb-qtz-sph-ga
185.9	4	83W	So?
185.9	3	83W	Cb,py
185.9	205	50E	Cb
186	183	081W	fracture
186.1	66	60NW	cb-py
186.1	6	85W	cb-qtz
186.4	1	63W	py-cb
186.7	0	61W	So?
186.9	172	82E	qtz-cb
187.4	1	82W	So
310.9	45	46E	So
310.8	175	82E	1mm Cb
311	160	46E	So
311	340	40W	1mm Cb
311	330	74W	So
311.8	110	61E	Cb vein
354.3	180	72E	S1
355.2	325	74W	5mm shear
355.7	1	74W	S1
356.4	34	76W	So
356.6	59	70W	So
357.1	39	60NW	1mm cb
357.3	320	35E	1mm cb
357.3	352	34W	1mm cb
357.4	137	55W	1mm cb
357.5	155	79W	1mm cb
357.7	150	85W	1mm cb
357.8	315	15E	2mm qtz-cb-sph-ga
357.6	37	74W	So?
357.95	145	72W	S1
357.9	170	76W	2mm Cb
357.9	340	22E	qtz-cb-sph-ga

645127

11/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	Q'town
Hole_Type		Tenement_No.	EL6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	5/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred old field	preferred old field
		363					50/42 Cb/24	
		364					50/54	
205		365					Cb/25	
							50/52	
		366						
		367						
210								
		368	211 – 224.6m. Numerous q/z-carb veinlets + veins to 22cm		5mm/orB	5mm Cb Shale.	5mm Cb/25	
		369					50/70	
215		370					Cb/10	
		371			15m/023		15mm Cb/qtz/11	
		372					7mm Cb/15	
220								

645128

12/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID MS7	Project Q1
Hole_Type	Tenement No. EL 6/98
Year 1999	Prospect BEATRICE
Geologist KPD	Date 5/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred std field	preferred std field
		373			063 25cm % carb			
		374					50/80 ch fg 10m 1/10	
225								
		375						
		376					50/82 50/80	
		377						
230								
		378	#230.5m. Black shale geochem sample. 331997				PY·Carb 78° PY·Carb 78°	
			-231.8 - 254.0m quartz/feldspar porphyry, weakly propylitic base & top = intrusive. unaltered hornblende still present.					
		379						
235								
			The phenocrysts are locally aligned.				Cb/15 35 Cb/95	
							Qtz Carb Chl/24	
240								

645129

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	Otter
Hole_Type	DIAMOND	Tenement No.	EL 6/48
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	6/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred old field	preferred old field
						4		
							2D/Carb-Sil ?	
							2B/(10cm) Qtz, Carb Chl	
							2B/Stone	
							2T/Carb Chl	
245								
							2/Qtz Carb Chl	
							2S/Qtz Carb	
250								
		381						
			254.0 – 255.8m					
255		382	Semi massive black shale.					
			255.8 – 261.2m.					
			quartz-feldspar porphyry, well developed pervasive from 255.8 – 256.4					
		383						
		2584						
		384						
260		eg.						

645130

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Q'town
Hole_Type	DIAMOND	Tenement No.	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	6/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred old field	preferred old field
		384					10mm qtz-ch / 50 20/20	
		385	261.2 – 315.1 m. Black Shale. Fairly massive, locally sandstone clasts? with abundant pyrite.					
		386	263m: galena rich 2mm carbonate veinlet From 261.2 – 286.0m. seven of mine 2.3mm carbonate veinlet		263.5m py. 65° pale carb Reddish sph 60mm	ch/py 263m galena ch/py ch/py 3mm	5mm ch / 10	
265								
		387			32° qtz. carb.		50/70	
		388			carb-Qtz 58°		50/66 50/62	
270		389						
		390						
		391	* Orientation mark.		35° C-to 28 Qtz-Carb			
275								
		392					50/30	
		393						
280		394						

645131

15/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Q4
Hole_Type	DIAMOND	Tenement_No.	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	6/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	Structure	
			283-284.2 – broken core minor py - weak fault.					
		395						
		396						
285					7% py-carb			
		397					50/50°	
		398					57° py-carb	
290		399						
		401	py sandstone,				50/39°	
		402			60mm carbonate vein		45/20mm shear	
		403					90° carb 22° 50/38°	
		404					58° Qtz-Carb	
300			299.5-300.9m highly broken core + py fault.					

645132

16/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	NS7	Project	Q'Town
Hole_Type	DIAMOND	Tenement_No.	EL6698
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	6/1/98

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred old field	preferred old field
		405	300-317m pyritic 301-310m series of 3-5mm carbonate py veinlets. 303m: 10cm bedded carbonate bed with abundant pyrite - offset by minor fault.	py		302.6 cb-py 305.8	30/20	
305		406						
		407						
		408		py			2mm py/cb. /043 5mm cb/py /022	
		409						
310		410					10mm cb /052	
			* Sample for IP testwork * black shale geochemistry s/stg/qz					
		411	lithic fragmental (volcanic + black shale) and quartz phenocrysts, minor matrix. 317.9-317.2m hornfelsed, mica pug.				10mm Qtz Carb 40	
315		412						
		413	315.1-316.1m: black shale/ grey carbonaceous siltstone slabby breccia. minor matrix.					
		414	316.1-317.2m: black shale breccia / pseudobreccia					
			317.2 - 331.2m.	diss sph ass with cb rich matrix	diss sph in cb clast	blk slab		
		415	Fiamme, crystal, lithic rhyo flows. Massive interbedded top, clastic rich portions are pyroclastically					
320		416						

310.9 So 045/46E
311 So 160/46E
311 So 330/44W

645133

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Dharma
Hole_Type	DIAMOND	Tenement No.	EL6/98
Year	1999	Prospect	BEATRICE
Geologist	KD	Date	6/1/99

Depth	Lithology: Code	Lithology: Colour	Comments	Alteration (Up to 3 codes w. intensities (1-3))	Mineralisation (Up to 3 codes with %)	Graphic Log (1 2 4)	Structure	
		416	Fissile thin bedded and some limestone. Strong fabric in basal part of the unit.		cb/gn 7+		45/Ob Carb	
		417					cb/gn 7+	
325		418			cb/gn/sphy 015			
		419						
		421				limestone		
330								
		422	331.2 – 337.2m					
		423	as at 317.2 – 331.2m but more fissile.			fissile		
335		424						
		425					50mm 40/L.15 060°	
		426	337.2 – 351.1m interbedded ashy volcanic siltstone & fine grained volcanic sandstone. Scattered carbonate spotting.					
340		427						

645134

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	O'Horan
Hole_Type	DIAMOND	Tenement No.	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	6/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. Intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	Bedding and Foliation	Unrelated old field
		427					S_0 / 22°	
		428					5mm Cb / 27	
345		429	* Sample for IP testwork					
		430		carbonate spotting	40% Carb		S_0 / 37°	
		431		carbonate spotting	37% Carbonate		S_0 / 065	
350		432				fracture with calcite	S_0 / 045	
		433	351.1 – 356.4m. Graded limestone - crystal rich transition/flow unit, coarse base finely bedded top.			fragments rich in clasts	3mm Cb / 40 S_0 / 045°	
355		434	* Sample for IP testwork			limestone		
		435	356.4 – 369.2m Interbedded ashy siltstone and sandstone as at 337.2 – 351.1m				S_0 / 36	
		436						
360						40% Pyrite		

354.3m S_1 180/72E,
355.7m S_1 001/74W,
356.4m S_0 034/76W,
356.6m S_0 059/70W,
357.45 S_1 145/72W,

645135

MS7 orientated core:

Depth	Azimuth (true)	dip	feature
185.1	357	78W	3mm py/qtz(x3)
185.2	62	74W	So?
185.4	167	20E	Cb
185.5	181	82E	Sph,qtz,cb
185.6	351	87W	Sph,qtz,cb
185.8	351	87W	Sph,qtz,cb
185.6	151	15E	2mm Cb
185.7	193	77E	3mm Cb-qtz-sph-ga
185.9	4	83W	So?
185.9	3	83W	Cb,py
185.9	205	50E	Cb
186	183	081W	fracture
186.1	66	60NW	cb-py
186.1	6	85W	cb-qtz
186.4	1	63W	py-cb
186.7	0	61W	So?
186.9	172	82E	qtz-cb
187.4	1	82W	So
310.9	45	46E	So
310.8	175	82E	1mm Cb
311	160	46E	So
311	340	40W	1mm Cb
311	330	74W	So
311.8	110	61E	Cb vein
354.3	180	72E	S1
355.2	325	74W	5mm shear
355.7	1	74W	S1
356.4	34	76W	So
356.6	59	70W	So
357.1	39	60NW	1mm cb
357.3	320	35E	1mm cb
357.3	352	34W	1mm cb
357.4	137	55W	1mm cb
357.5	155	79W	1mm cb
357.7	150	85W	1mm cb
357.8	315	15E	2mm qtz-cb-sph-ga
357.6	37	74W	So?
357.95	145	72W	S1
357.9	170	76W	2mm Cb
357.9	340	22E	qtz-cb-sph-ga

135
85
40
250
240
OLC

235
271
304
329
309

645136

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	O'Loughlins
Hole_Type		Tenement_No.	EL6/98
Year	99	Prospect	Beatrice
Geologist	KCD	Date	7/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 2 4		
		437	360 - 368.2m, galena fractures, veinlets + disseminations associated with chlorite alt'n.	↑	galena on fractures, in veinlets + disseminated		So/068	
		438		moderate chlorite				
365		439	galena on fractures,	altered			So/045	
		441						
		442		~~~				
		443	369.2 - 382.9m					
370			Volcanic conglomerate. lithic clasts (rhyolite, vol + limestone) and fiamme typically 5-7mm but to 30mm in a fine crystal - sericite? matrix.			rhyolite; limestone; fiamme; chlorite		
		444						
		445						
375		446	From ~374 - 377m black zones of chlorite with associated galena + Sph?	——	ga on			
		447		ch	fracture			
		448		——				
		449				rhyolite		
		450						
380								

645137

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	Q Town
Hole_Type		Tenement_No.	EL 6/95
Year	1999	Prospect	Beahan
Geologist	KPD	Date	7/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log		
		451						
		452	382.9 – 390.4m Lithic-feldspar-crystal sandstone				So/48°	
385		453					60° Carb	
		454					So/43°	
		455						
390								
		456	390.4 – 390.9m Cream-grey limestone breccia 390.9 – 407.4m Lithic feldspar crystal sandstone		hm veins carbonate nodules	Sil/Ga	42°	
		457	393.6m carbonate nodules to 50mm with veins of galena and sphalerite.					
395								
		458					So/040	
		459					So/54	
		461					So/055	
405								

645138

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Otter
Hole_Type		Tenement No.	EL 6/98
Year	1999	Prospect	Beatrice
Geologist	KDD	Date	7/4/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log		
		462		401.1			30/60	
		463	Strong zonal chlorite alteration from 402.8 – 405.1m with chlorite spotting either side, thin altered bar associated disseminated galena and sphalerite, large blob of sphalerite at 404m.	Chl spotting				
		464			diss ga + min sph, main sph in carbonate veinlets.			
		465		Chl patchy.		spl		
405		466						
		467						
		468		Chlorite spotting 407.7m				
		469	407.4 – 428.4m Series of limestone rich and pumiceous (?altered) mass flow units.					
410								
		470						
		471						
415								
		472						
		473				limestone rhyolite		
		474						
420								

645139

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Q/Kan
Hole_Type		Tenement_No.	EL 6/88
Year	1999	Prospect	Seahorse
Geologist	KRD	Date	29/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 2 4	preferred std field	preferred std field
		475		weak sericite alteration of pumice fragments				
		476						
425		477					So 60°	
		478				← predominantly foliated.	So 70°	
		479	428.4 – 431.6m grey-green fine grained ashy volcanic, minor dark green blebs = chlorite spots?		5% py/cpy		9/5//040 cpy	
430		481	431.6 – 436.7m crystal, limestone rich, pumiceous near floor,					
		482	432.3 – 132.75m limestone breccia,					
435		483						
		484	436.7 – 449.2m blue/grey – cream fine grained ashy volcanics,	weak chlorite				
		485						
440								

645140

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	QLD
Hole_Type		Tenement_No.	EL 6/88
Year	1999	Prospect	BEAMISH
Geologist	KPD	Date	29/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred str field	preferred str field
		486	limestone, pumiceous crystal mass flow unit from 441.3 - 442.8m.			limestone		
		487	minor K-Spar (Albite?) alteration from 444m.					
445		488		↑				
		489		weak feldspar alteration ↓			So?	
		490	449.2 - 454.3	K7			qtz vn	
450		491	moderate to strongly K-feldspar altered with a central core of chlorite alteration: K-feldspar/chlorite alteration gives a pseudobreccia texture, host type is fine grained graded, lithic volcanic sst.	K-feldspar alt'n. ↓	hem spotting	K. feld chlorite		
		492						
455			454.3 - 460.2	weak				
		493	Pink - green grey fine grained ashy volcanic	feldspar alt.			numerous qtz/cb/ch veinlets subparallel to VCA	
		494		↓				
		495						
460								

645141

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Dilston
Hole_Type		Tenement_No.	EL6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	29/1/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 2 4	preferred old field	preferred old field
		496	460.2 - 470.2m Similar unit to 449.2 - 454.3m. moderately K-feldspar altered lithic pumiceous volcanic sst. Pumiceous fragments have been altered to dark green chlorite.	K-feldspar minor silicification? chlorite.	9% Tr Cpy 20cm.			
		497						
465								
		498						
		499						
		166001						
470								
	470.2	002	470.2 - 479.1m. dark brown - green fine ashy volcanic.					
		003						
475		004	474.9 - 479.7 9% vein - silicification. Py, Cpy,	Si.	9% Py Cpy			
		005					070 cll	
		006	479.1 - 484.9m.	chlorite + patchy K-feldspar				
480								

645142

25/28

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Q1 Fm
Hole_Type		Tenement No.	EL 498
Year	1999	Prospect	Beatrice.
Geologist	ICPD	Date	

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	Structure	Structure (continued) and Data
		007	Green-pink lithic sandstone. Pink (feldspar altered?) lithic clasts to 5mm in a blue-green chloritic matrix. cut by a series of chlorite-carbonate veins,		(py + multi coloured mnl Cb.			
		008		Chlorite	py/tr/cll		cb/tr/cb/cll. py/tr/cll,	
485		484.9-						
			484.9- 511.7m					
		009	blue-blue green fine grained ashy volcanic, variable + patchy K-feldspar alt^n,					
		010		weak K-feldspar			cll/tr/cb.	
490		011						
				K-feldspar				
		012		Patches/				
				blebs				
		013						
495								
		014					050° cb/tr/cll	
			Scm zone of * 497.2m blebs of calcite containing accicular magnetite + surrounded by K-feldspar alteration.					
		015						
500								

645143

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	QTF
Hole_Type		Tenement_No.	EL6/98
Year	1999	Prospect	Beatrice
Geologist	KPD	Date	

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log	preferred std field	preferred std field
		016						
		017						
505		018	* minor galena in vein/vein				055 sph/ch1/py	
		019						
		021	* Cpy/qtz in qtz/chl/ch vein/vnlet					
510		022						
			511.1 – 526.8m					
		023	feldspar crystal, lithic, Pumiceous slt → sst.					
		024	This appears to be a single graded unit. Chlorite blebs which increase in size with overall grain size are interpreted to be primary					
515				weak				
		025	chlorite altered flattened Pumice	Chlorite alt'n				
		026						
520		027						

645144

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS 7	Project	Q'lle
Hole_Type		Tenement_No.	EL6/98
Year	1999	Prospect	Beatrice
Geologist	ICPD	Date	

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log
520						
		028		Weak chlorite alt^n,		
		029				
525				↓		
		030		Patchy K-fld.		
		031	526.8 m - 550.0m (EOH). Blue-green ashy -> siltstone volcanic, plagioclase crystals and black-green wispy chlorite after frame. * galena and sphalerite associated with qtz-chl-carb veinlets		minor sph/ga in veinlets	qtz/chl/fld
530						
		032	* disseminated/Veinlet Cpy associated with 20cm chlorite altered zone.		K-Spar chl	
		033				
		034				
535						
		035				
		036				
540		037				

645145

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	MS7	Project	D'Town
Hole_Type		Tenement_No.	EL 6/98
Year	1999	Prospect	Ironforce
Geologist	KDP	Date	

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 1 4	produced unit thick	produced unit thick
		037						
		038						
545		039						
		041					11/413/6.	
550		042						
			550.0m (EOH)					

645146

PASMINCO EXPLORATION

DIAMOND DRILL HOLE LOG

Input

Hole_ID	MS-03	Project	
Hole_Type		Tenement_No.	
Year	1999	Prospect	
Geologist	ARMS	Date	9/5/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
0.0		brown									
		6.6									
10											
		green-brown						14.7(0.5/?)N			
15											
			quartz-feldspar-porphyry	clay (2) & fld. ser, sil (1) (ground mass			silico (1)				brown intervals are more intensely leached/weathered
20											
25		top									
		brown									
		26.8									
		green					29.0				
							silico (2)				
30											

64514

PASMINCO [redacted] ORATION

DIAMOND DRILL HOLE LOGGI[redacted]

Input

Hole_ID	[redacted]ject
Hole_Type	Tenement_No.
Year	Prospect
Geologist AMcM	Date 9/5/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
30					Lst						
					Sst (tr)						
					Sst						
35											
		green									
		32.9									
40		brown									
		Lst									
		green	quartz - feldspar - porphyry	clay (x) after feldspar			Sil + Ca (2)				brown - green intervals are weathered - green intervals are v. fresh.
				Ser, Sil (1) & granulation.							
45											
		brown - green									
50											
55											

64148

PASMINCO ORATION

DIAMOND DRILL HOLE LOGGI

Input

Hole_ID		ject	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	Aryan	Date	9/5/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
55											
60											
65											
70		green-brown	Quartz-feldspar-porphyry. (2 core losses 70.1m, 70.6m & brecciation & Co (@ 58.6m) or vk altered (@ 77.4m and 69.9m)	Clay (2) (light yellow) Sil, ser (1) (& groundmass)			Sil+Co (2)				all faults loaded + southward
75											
80											

6451149

PASMINCO .ORATION

DIAMOND DRILL HOLE LOGG

Input

Hole_ID	oject
Hole_Type	Tenement_No.
Year	Prospect
Geologist Aymard	Date 9/5/[illegible]

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. Intensities (1-3)	Up to 3 codes with %						
80		green-brown		?Ser (2) Chl (1)		80.4 Fol. 45° blue (weakly defined flow-banding)	Co+Si (2)				82.0 end of obvious weathering.
		82.0					86.5 Co+Si±Chl (2)				
87		Green-Pink		Si,Kf (2) Ser,Chl (1)							
							87.9 Co+Si (2)				
		92.3		87.3							
		Pink		Si,Kf (2) Chl,Ser (1)			89.8 Co+Si±Chl (3)				
90											
		92.2									
			quartz-feldspar-porphyry (coverage size of 92 mm. Same to be decreasing white	92.0			91.9 Co+Si (2)				
95											
		brown		Si,Kf (2) Chl,Ser (2)			97.4 Co+Si±Chl (3)				
100							98.2				
							Co+Si (2)	103.7/0.2 : Ab, Py 104.2/0.1 : Qz			102.0
105											

Drill Log.xls

645150

PASMINCO [redacted] .ORATION

DIAMOND DRILL HOLE LOGGIN[redacted]

Input

Hole_ID	93-09	[redacted]ject	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	[illegible]	Date	7/5/[illegible]

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
105							Co+Sil (2)				
							105.6				
							Co+Sil±Chl (1)				
110							109.6				
							Co+Sil (2)				
115								113.0-1 / 20 / R			
		Cream.	Quartz-feldspar-porphyry Minor mica-chlor. rare rutile blak.	Sil, Kfs (1) Chl, Ser (2)							
120											
125											
							127.2				
							Co+Sil (1)				
				125.0	125.0		123.1				
		128.0					124.0 Co+Sil (1)				
		Pink 129.0		Sil, Kfs (2)	Wk Py (tr)		Sil+Co+Chl (3) 129.0				
		brown		129.0	129.0		Sil+Co±Chl (2)				
130				Sil, Kfs (1) Chl, Ser (2)							

6451511

PASMINCO E[redacted]ORATION **DIAMOND DRILL HOLE LOGGING[redacted]** Input

Hole_ID MS-09	[redacted]oject
Hole_Type	Tenement_No.
Year 1999	Prospect
Geologist AMcN	Date 7/3/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
130		brown		sil kb (1) ser chl (1)			Ca sil ± chl (2)		80°/360/133 / 4m		
				1547							
		Pink		Sil kb (3)	1546		1496				
135					Vn Py (tr)		Ca sil ± chl (3)				
				1365			1559				
		1567			1357						
							Ca sil ± chl (1)				
140					1404		1409.9				
					Vn Py (tr)		Sil Ca ± chl (3)				
		Pink Green (Loam)	Quartz-kfeld. porphyry.	Sil, kb (1) Ser, chl (2)	Vn sl (tr)						
145					1446		1444				
								1460/01 / 4m / Pv, ch			
							Sil, Ca (2)				
150											
155											

645152

PASMIN[redacted]PLORATION

DIAMOND DRILL HOLE LOGGING

Input

Hole_ID	MS-08	Project	
Hole_Type		Tenement_No.	
Year	1994	Prospect	Beatrice
Geologist	[illegible]	Date	8/5/94

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
155				Sil, kfs (1) Ser, Chl (2)			Sil ±Co (2)				
		Pink green		159.0			159.8				
160							Sil ±Co ± Chl (1) 162.2				
				Sil kfs (1) Ser, Chl (2)			Sil ±Co (2)				
		164.1		164.1							
165											
				Sil, kfs (2) Ser, Chl (1)				166/1.3/?/Bk			
			quartz - feldspar - porphyry				167.4				
							Sil ±Co ± Chl (3) 169.7				
170				169.5			Sil ±Co (2)				
				Sil, kfs (2) 171.3			Sil ±Co (3) ± Chl, kfs 173.2				
		Pink									
				Sil, kfs/kfsm (2) Ser, Chl (1)			Sil ±Co (1)	134.2/0.1/40/Pu			
175								135.1/0.1/12/Pu			
								136.1/0.01/40/Pu			
				179.4 Sil, kfs (1)			179.7				
180											

645153

PASMINCO EXPLORATION

DIAMOND DRILL HOLE LOG

Input

Hole_ID	MJ-8	Project	
Hole_Type		Tenement_No.	
Year	1999	Prospect	
Geologist	KAEN	Date	8/5/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %					
190		Pink		Sil, Ky (2)			Co+Sil (3)			
			191.0	191.0			191.0			
195		Pink green	quartz-feldspar-porphyry minor xx domain matrix clasts.	Chl Ser (2) Sil (1)			Co+Sil ± Chl (2)	196.0/0.1/40/Pv 197.0/0.1/40/Bk,Pv 199.0/0.01/30/Pv		
200				196.0						
		brown		Chl, Ser (3) Sil (1)				201.2/0.2/30/Pv,Bk	fault 201.2	
			201.2	201.2						
		grey Pink	foliated, minor coated-rich volcaniclastic sandstone.	Ser, Chl (2)			Co+Sil/Chl (3) 204.2 205.5	204.5/0.3/55/Pv,Ch		
205			clast-wacke clasts: QFP, ?pumice, grey ch/av vfde lavas, basaltic alt. vfds. unsorted, clast-supported (v. qz-fd rich/chl-rich) lithic clasts to 80mm dia. 207.3				Co+Sil (1)		fault 207.2	
		white, Grey-	Sil + Co vn 207.4	206.3			Co+Sil ± Chl (4')	207.7/0.9/55/Ch	fault 207.3	
210		Pink, Brown	quartz-feldspar-porphyry. 210.2	Chl, Ser (1) Sil, Ky, Ser (2)			Co+Sil+Ser Chl (3)		fault 210.2	
		white	Sil + Co vn 210.3	210.1			Co+Sil±Chl (4')	210.7/0.5/30/Ch	fault 210.7	
		brown	quartz-feldspar-porphyry	Chl (3) Ser (2) 216.0 Chl (2) Sil (1) Ser (1) after Ky			Co+Sil (2)			
215										

6451154

PASMINCO LORATION

DIAMOND DRILL HOLE LOGGIN

Input

Hole_ID	MS-9	Project	
Hole_Type		Tenement_No.	
Year	1999	Prospect	Bentrice
Geologist	Aaron	Date	8/7/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
205		brown. green		chl (2) sil (1) ser (2) & fd.			Co+sil (2) 208.4 Sil+Co ± chl ± kfs (1) 208.7	208.7/0.3/65/Rh,Rk			
210		208.0									
215							Co + Sil (1)	210.1/0.3/65/Rh,Rw			
220		Pink brown	Quartz-feldspar-porphyry. quartz (to 0.7mm) feldspar (to 0.7mm - sheared-ss?) - ver. altered. Mafic (hbl + musc rare).	Sil (1) kfs/hem (1-2) (mix+/dx)							
225				222.5 Sil (2) chl (2) pal. kfs/hem (1)	220.8 Sil Hm (0.2.2) 221.8		220.9 Co+sil ± kfs ± Sn (2) 221.9 Co+Sil (2) 226.6 Co+Sil+chl (2) 225.5				
230				227.0 chl/ser (1) Sil, kfs (2)			(2) Co+Sil 226.9 (1) Co Sil 227.1 Co+Sil (2)	229.0/0.1/60/Rh,Rk			

PASMINCO [redacted] LORATION **DIAMOND DRILL HOLE LOGGI[redacted]** Input

Hole_ID	[illegible]	[redacted] Project	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	AM:N	Date	7/5/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
230		Pink Green	Quartz-feldspar-porphyry 241 - 2209 = black massive black shale.	Sil, Ky (2) Chl, Ser (1)							
240	227.9	Black, green	Black matrix volcaniclastic ± 92 clast, irregular porphyry (quartz?) clasts and feldspar clast.	227.9 Clasts: Ser (1)	229.9 Py Va (0.5%)		Co + Sil (2)	229.1/0°/50°/RHR	228.9 fault.		
	241.0	Green		241.0 Ser, Sil (2-3)	Sil Va (1%) 241.0				241.0 pegmatite		
250	245.7	Green Pink	Quartz-feldspar-porphyry	245.7 Chl, Ser (1)	Py dis (0.5%)		Co + Sil (2)		245.7 pegmatite		
	248.5	Black green	Black matrix volcaniclastic ± 92 + fd clast, irregular porphyry (quartz?) and minor pyrite clasts.	248.5	Sil Va (1%) 248.4 Py vn + dis (1%) 249.2	247.5 Va: 38° to CA 246.6 Ser 65° to CA		248.5/0°/50°/RHR	248.2 fault		
	252.7	Black	Rock laminated black shale.	Co (2)			Co ± Sil (3)		252.7 Intrusive, Aphyric		
260		Pink, green	Quartz-feldspar-porphyry	Sil Ser (2-3)							
	260.2 260.4	Black	Shale, rock laminated	260.4 Sil Ser (2-3)		258.3 Sil 65° to CA		260.3 0°/50°/RHR	259.1 fault 260.4 dolerite		
	261.2	Green, Pink Brown	Quartz-feldspar-porphyry ± shale 'clasts' at 252.9 - 253.9	261.2 Sil, Ser, Chl (1)			Co + Sil (2)				
270											

6451156

PASMINCO [redacted] PLORATION

DIAMOND DRILL HOLE LOGGI[redacted]

Input

Hole_ID	MH	Project	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	[illegible]	Date	22/4/94

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
160											
165		Loam.		Sil.ser.chl (1) "regional"							
170		169.0	quartz-feldspar-porphyry Quartz to 0.9cm dia; feldspar-phen. to 0.7cm dia. Mafic-phen. to 0.4 cm dia. Some matrix clots to 1cm dia; Veins to 0.6 cm long. (Not veined)	166.0	166.0		Calsil (2)	165.9/005/60/Pu		F	
175		Mafic-sem.		Sil.ser.chl (1) Narrow zones of chl (2-3)	1% (1) in Vn						
180				178.0 Sil.ser.chl (1) "regional"	180.0			178.1/0.01/70/Chl		F	

PASMINCO E[redacted]RATION **DIAMOND DRILL HOLE LOGGING[redacted]** Input

Hole_ID	MS-8	[redacted] Queensland	
Hole_Type	DDH	Tenement No.	6198
Year	1999	Prospect	Beatrice
Geologist	AMcN	Date	24/5/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %			Depth to base / Thickness / Angle / Texture			
285											
290		Khaki-Green	quartz-feldspar porphyry Scattered altered mafic phenocrysts (Also Mica Phenocryst phase)	Sil, Ser, Chl (1) 'Regional'			Sil+Qz (1)				
295			291.4	294	294.5 diss Py (tr) 295.5 diss Py (1or2) 294.4 disp+vn Py (1%) vn Sp (tr)	295.2 So: 25° to CA	298.4 Sil+Qz (2)	292.9/0.5/?/Bx,th 294.8/0.3/70/Bx,Ph 295.8/0.15/60/Bx,Ph Py	294.4 Gabbroid over 0.3m	F F F	
300		Black-Grey	Laminated black shale with rare mud matrix, clast-rich (Qp, Slst) intervals (< 5cm thick) 'syngenetic' Pyrite on some beds. Shale ~ Carbonate-chlorite Part. 299.5	299.5 Chl (2) Ser (2) 300.4	296.0 disp+vn Py (tr) Py(5%) 299.5 299.8 disp+vn Py(1%) vn Sp(5), vn Q+(tr)	296.0 So: 45° to CA 298.5 So: 45° to CA	Sil+Co(1) 299.9 Sil+Co(2) 299.5		299.5 Pegmatite Contact (over 0.5m)		
305		Brown-green Black Orange-Pink	quartz-feldspar-porphyry (mafic phen. rare-absent) 302.3 Laminated black shale/siltstone 304.2 Quartz-feldspar porphyry; no dkv. matrix.	Sil, Ser (1) 'Regional' 304.3 Sil, Ky? (1)	low Py (1%) vn Sp (tr)	303.4 So: 50° to CA	Sil+Co(1) 304.2 Co(2)		302.3 Pegmatite Contact (over 0.2m) 304.2 Transition Abrupt Contact.		

64515 8

PASMINCO EX[redacted]ATION

DIAMOND DRILL HOLE LOGGING [redacted]

Input

Hole_ID	MS-9	Tenem[redacted]	
Hole_Type		Prospect	
Year		Date	4/3/99
Geologist	AMcN		

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
			Quartz-feldspar porphyry 307.9	Sil, kfs? (1)	308.8		(0 (1) 309.6		309.2 Repetitive Contact (over 0.1 m)		
		Black Brown	Black shale + siltstone/sandstone minor green volcaniclastic str. beds to 10cm thickness. Bedding textures/alts destroyed.	Wk: Ser Chl (1)	dis Py (tr) 314.4 Py 5% (5?) 316.2	Sh9.0 So: 35° to CA					
310			311.0	311					311.0 Contact over 0.5m.		sediments v. fine to v/fine laminated shale in pc-7
		Black	Black shale (laminated) minor lat brown siltstone laminae		dis Py (tr) 315.2			small scale kinks often throughout			
			315.4						315.4		
		Black Green	Black Shale + siltstone/sandstone Vist unit to 1cm thick 317.0		dis Py (1?) 315.5 Va, dis Sp (1?) dis Py (coT?) 318.0		Sil + Co (1)		318.0 Irregular Contact		
320		Pink, Green	Quartz-feldspar-porphyry 319.4	Sil, kfs? (2)	320.6				319.4 Irregular Contact 319.7 Planar Contact 320.6 Irreg. Contact		
		Black, Pink-Green	Fine-calculated Quartz-feldspar-porphyry and shale with thinly interbedded siltstone/sandstone 322.4	Sil, kfs? (2) Ser (1) 322.4	320.7 dis Py (1?) 322.4 dis, Va Py (5?) 322.7				320.7 Repetitic (0.05m) 322.4 Repetitic (0.01m)		
325		Black Grey	Black shale interculated ± 4mm (<0.5cm) interbeds of siltstone/fine sandstone (bedding discordant (textures: well fed)		dis, Va Py (0.5?)	1140 So 45° to CA					
		Green	Symmetric Py on bedding; calcareous in part 326.1 Quartz-feldspar-porphyry 326.6	Sil, Ser (1)	325.6 Va, dis Py (5?) 326.1	Va: thin seams bedding disrupted by small-scale faults	326.6		326.1 Repetitic (over 0.1 m) 326.6		
		Black Green	Black shale bedded with thin (<0.7cm) siltstone/sandstone beds; minor fine-banded Py. 329.1		Dissem Py (0.5?) + Sp (0.5?) 328.1	327.6 So: 20 to CA	Sil + Co (2)		328.1 Repetitic (over 0.1m)		
330		Green Pink	Quartz-feldspar-porphyry, no obvious mafic minerals	Sil, Ser (1)			Sil + Co (1)				

645159

PASMINCO EX[illegible]JATION **DIAMOND DRILL HOLE LOGGING** **Input**

Hole_ID	MSR	Tenement	
Hole_Type		Prospect	
Year		Date	29/3/99
Geologist	Angus		

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
330		green pink	Quartz-feldspar-porphyry Minor mafic phenocrysts	Sil, Ser (1)							
335				334.4 Sil (1) Ser (2)	335.0						
		black grey	Black shale and grey siltstone/ sandstone Sst/st beds < 2mm thick; sst/st calcareous Planar laminated - no obvious fabrics	335.4	dis Py (0.5%) Va Sp (tr) 337.1 Va dis Py (3%) Va Sp (tr)	337.1 So: 40° to 160	Co + Sil (1)		337.4 Peneatite (over 0.6m)		to continue from 337 - 339.0m, above + below is tectonically disrupted
340				340.6	340.6						
		green brown	Quartz-feldspar-porphyry Minor mafic phenocrysts in centre of unit	Sil (1) Ser (2) 342.2 Sil, Ser (1)					340.6 Peneatite (over 0.1m) 344.2 broken		
345					344.1						
		black grey	Black shale + thin (< 4mm) interbeds of very silt/sand. Lithium tectonically disrupted; no obvious fabric. Some 'link' style balls in Sp		dis + Va Py (0.1%) 342.5 dis + Va Py (1%) Va Sp (tr)	346.0 So: 40° to 160 349.0 So: 60° to 160	347.5 Co ± Sil (2)	349.9/0.3/30/Ht, ch 350.3/0.4/30/Py			
350					350.3		350.3	352.3/0.15/20/Sh, ch			
					dis + Va Py (0.1%)	353.1 So: 60° to 160	Co ± Sil (1)				
355											

PASMINCO E[redacted]RATION **DIAMOND DRILL HOLE LOGGING[redacted]** Input

Hole_ID	MS-8	[redacted] :	
Hole_Type		Tenement_no.	
Year		Prospect	
Geologist	Amen	Date	29/3/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
155											
		black green	black shale ; interbedded thin siltstone/ sandstone minor non-calcareous. 163.5			338.0 bc 45° to tca	Ca + Sil (1)	342/01/50 / 343/5	339.5 planar abrupt		
		black green	black shale ; interbedded slst/sst and green sub-rounded/subangular sandstone ; non-calcareous 169.6		dis - Vn Py (5?) Vn Sr (1?)	339.5 bc 35° to tca			339.6 Faulted		338.6 : So, F, Si — small scale fault disrupts beds ; well developed 'Si' cleavage to normal
160							159.6				
		white green black	Fault Zone / shale		Vn Py (0.5?) Vn Sr (tr)		Sil + Ca ± chl (3) 162.2			Fault zone	
			163.7		163.7			163.7/3.9/55/Ch, Ru			
165		black	wk. Laminated black - shale		Dis + Vn Py (1?) Vn Sr (tr)						
		black brown	165.7 interbedded black shale and wkd fine brown siltstone, sandstone intervals. thicker sandstone beds are Carbonate-rich 169.1		165.7 Dis + Vn Py (5?) Vn (± Ca-Si) Sr (tr) 169.7 dis + Vn Py (3?)	165.7 bc 35° to tca 169.6 Si: 45° to tca 169.0 So: 40° to tca	Ca + Sil (1)		165.7 slickenlined over 0.4m 169.1 gradational over 0.2m		167.6 : So, Si
170											
		black white black	wk. laminated black shale 176.6 shale / Fault Zone ; strongly Sil + Ca ± chl Veined broken, Pugging 171.5m 173.2		Vn Sr (tr) 176.6 Vn Sr (0.5?) dis + Vn Py (1?) Vn (Si-Ca) Sr (3?) 173.6 Vn Sr (tr) 173.7 Vn Py (1?) 174.1		170.7 Sil + Ca ± chl (3) 174.1	175.7/2.1/?/ Rh, Ru	173.6 fault 173.7 Sheared, veined, faulted	Fault zone	
175				174.1							
		brown green	quartz - feldspar - porphyry minor mafic phenocrysts.	Sil Ser (1)	Vn + dis Sr (0.5?) Vn Sr (tr)		Sil + Ca ± chl ± Kb (3)				

Drill Log.xls

PASMINCO EX[redacted]ATION **DIAMOND DRILL HOLE LOGGING** [redacted] **Input**

Hole_ID	MS8	Tenem[redacted]	
Hole_Type		Prospect	
Year		Date	1/7/97
Geologist	Mc N		

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
						80% flow units = 75° to LCA					
385											
390											
		brown-green	Quartz-feldspar Porphyry Weakly flow-banded in parts, some minor zones ± brecciation Abundant matrix clasts & alt. pyrite common-rare. Several generations of veining i) Sil ± Co ± kfs (rare) ii) Sil + Chl ± Co ← (± Ser, Mag) major phase iii) Sil + Co	Silic (3)	Vn + dissem Sp (or?) Vn Gn (0.05%) Vn Asp (tr)		Sil + Co ± Chl ± kfs (3) (± Ser Gn)	390/0.8/?/Bk MF 4/0.2/?/Bk		
400											
								406/0.2/?/Bk			
405											

645163

PASMINCO EX[redacted]ATION

DIAMOND DRILL HOLE LOGGING [redacted]

Input

Hole_ID	MJ-04	Tenem[redacted]	
Hole_Type		Prospect	
Year		Date	16/4/94
Geologist	AM.N		

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
410		Green brown	quartz-feldspar porphyry	Sil sur (1)	Vn + dissem Py (0.1?) Vn Sp (0.01?) Vn Apy (tr)		Sil + Co + Chl ± kfs (3)				
			413.1		413.1		413.1		413.1 irregular		
		White Green	Vein - Sil + Co ± Chl				Sil + Co ± Chl (4?)				
415			414.7		414.7		414.7		414.7 irregular		
420											
		brown Orange	Quartz-feldspar porphyry	Sil (kfs?) 1	Vn Sp (0.2?) Vn gn (tr)		Sil + Co ± Chl ± kfs (± Sp, gn) (3)				
425											
430											

PASMINCO EXP[illegible]ATION **DIAMOND DRILL HOLE LOGGING** [illegible] Input

Hole_ID	MS-8	[illegible]	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	AMcN	Date	16/04/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
435		Light Orange		Sil (tr) (1)	Vn Sr (0.2%) Vn Sp (tr)						
440			Quartz - feldspar - porphyry	439.6			Sil+Co±Chl ±Ep (tr-6%) (1)	439.6 0.1/70/Shd/Ch			
445		Green Brown		Sil ser chl (2)	Vn+dim Sr (0.5%) Vn Sp (tr)		442.7 Co+Sil±Chl (2)				
450		Dark Green	446.9 Dk grey shale interbedded with chloritic Volcaniclastic siltstone beds (0.1 - 0.5 m thick) Contacts between bed + irregular rare calcareous beds in both Volc + Sh.	446.9 Volc + chl ser (3)	446.4 dissem Sp (2%) 446.9 Vn Sr (0.1%) Vn+dim Py (0.5%)	448.5 So: 15° to LCA. 449.0 So: 20° to LCA.	446.0 Co+Sil (2) 449.6 Co±Sil (3)	446.9 regular (cm 0.5m)			
455		Dark	451.9 Black shale		Vn Sp (tr) 451.9 Vn Sr (0.1%) Vn+dim Py (1%) Vn Sp (tr)	453.5 So: 30° to LCA Sv: 25° to LCA. 454.0 So: 40° to LCA Sv: 50° to LCA.	Co+Sil (2)	451.8 irregular (cm 0.1m			

645164

PASMINCO EXPLORATION — DIAMOND DRILL HOLE LOGGING — Input

Hole_ID	MD-7	Project	
Hole_Type		Tenement_No.	
Year	1999	Prospect	
Geologist	[illegible]	Date	14/6/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
		green	457.1 Vfgst, ± shale clasts. 457.6	Ser Chl (1) Per	457.6				457.6 Irregular (over 0.1m)		
						458.9 S_0: 35° to LCA.					
						459.3 S_0: 10 to LCA.	Co+Sil (2) (± Py)				
					Va+dis Py (1%) Va Sr. Gn (1%)						
460						460.0 S_0: 5° to LCA					
						S_1: 40° to LCA.					
								460.5/0.05/60/Py,Sk			C
					462.4			460.6/0.1/SS/Py			C
					dis+Va Py (5%)						
					463	463.2 S_0: 35° to LCA S_1: 25° to LCA	464.2				
465											
			* 465.8m Black Shale geochemistry sample (collected by MH)			466.2 S_0: 50 to LCA					
		black dk grey	Black shale, laminated in part. Calcareous 465-469m 469-469.5m Slight green colour ± ? chl on fault features.			466.2 S_0: 45° to LCA.	Co+Sil (1)				
470											
						471.4 S_0: 45° to LCA	471.6				
					Va+dis Py (1%)	473.6 S_0: 35° to LCA					474.6 Good core orientation
475							Co+Sil (2)				
											S_0: 70° to 160° (mag) S_1: 25° to 178° (mag)
						477.6 S_0: 50° to LCA S_1: 20° to LCA		477.5/0.1/SS/Py,Sk		C	
								477.2/0.05/30/Py		C	
480								479.5/0.05/35/Py			

PASMINC[redacted]PLORATION

DIAMOND DRILL HOLE LOGG[redacted]

Input

Hole_ID	MS-2	Project	[redacted]
Hole_Type		Tenement_No.	
Year	1999	Prospect	
Geologist	Adams	Date	19/4/1999

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
485		Black Grey	Black shale, well laminated Calcareous, 480–487.7m		Va + dis Py (1?)	482.0 bc: 25° to Lca 484.0 Sbc: 51° to Lca.		483.1/0.1/Cr/Py,Lk		F	
			487.7		487.7				487.7 Triangular (over 0.1m)	F	LHT-2 Core orient
		Green Black	489.0 Volcaniclastic Sandstone & shale clasts	Ser Cl (3)	dis Py (0.5?) 487	489.6 bc: 51° to Lca.	Ca + Sil (EPy) (1)	488.1/0.01/50/Py 488.6/0.01/50/Py	489.0 Triangular (over 0.1m)	F	
490											
		Black grey	Black shale, well laminated, Calcareous to 490m.		Va (+dis) Py (0.5?)	491.5 bc: 60° to Lca.					496.2 Core orient
495							494.0				
		grey, brown	496.1 496.6 Volcaniclastic Sandstone, feldspar-phyric, bed shale	Ser (2)	Va dis Py (5?)		Ca Sil (EPy) (3) 496.1	494.5/0.5/60/Py,Lk	496.1 gradational (over <0.1m)	F	bc = 60° to 045° mag. h: 21° to 103° mag.
								499.3/0.4/?/Py,Py	498.2 gradational (over 2.0m)	F	
500					Va + (dis) Py (1?)		Ca Sil ± Py (1)				
		Black grey	Black shale, well laminated, Calcareous for 500–507m.		Va Py (5?)	500.0 S_1: 30° to Lca	500.2 Ca Sil (?)	500.4/0.2/?/Py		F	
			# 498m increase of disseminated pyrite, black Concretions (@) not obviously calcareous		Va Py (2?)	501: 65° to Lca	Ca Sil ± Py (1)				
505						504.9 S_1: 50° to Lca.					

645166

PASMINCO [redacted] PLORATION

DIAMOND DRILL HOLE LOGGING [redacted]

Input

Hole_ID	MS-7	Project	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	A.M.C.J	Date	20/4/98

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
510					Vn Py (tr)					F F	Start Core circulation - Cont we
515						515.5 30° to Lca	Calcite ± Py (1)			F F	
520		Dark grey	Black shale, well bedded. at 518.5 thin (<1cm) light grey Carbonate beds appear scattered down-hole below 521m Quite fine-bedded appear. Sulfide seems well developed in some cores as disseminated bedding, not notably from 505 - 511 m.		Vn talc + Fe-carbonate Py (tr)	518.2 to 40° to Lca. 520.0 So: 50° to Lca	Calcite ± Py (1)				520.0 Core Point Cont we
525						524.5 So: 55° to Lca 524.5 So: 70° to Lca Ls: 25° to Lca					
530						529.0 So: 55° to Lca					525.9 Core circ. So: 60° to 110 avg 120 Ls: 25° to 35° avg 32

6451167

PASMINCO [redacted] .ORATION

DIAMOND DRILL HOLE LOGGIN[redacted]

Input

Hole_ID	MJ1	[redacted] oject	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	JJW	Date	20/1/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
535						531.0 bc: 50° to CA 534.0 bc: 60° to CA	Sil + Ca ± Py (2)				
540					Va + div + fracturoid Py (2%)	536.5 bc: 60° to CA 539.1 bc: 60° to CA	537.0 Ca + Sil (1)	538.0/01/61/64,Pu	539.6 535.6		539.2 Core Oriented bc = 30° to 070° mag
545		Dark grey	Black shale, generally well laminated. Sporadic calcareous below 55 m. Zones of strongly disrupted beds are indicated (545.0 - 545.6; 546.2 - 547.7; 548.2 - 550.2; 551.4 - 555.-?)			541.4 bc: 50° to CA	541.7		544.2		546.2 Core Oriented Cont use
550			thin grey calcareous "Limestone" beds are obvious above 546.2m Below 554.4m Calcareous, grey limestone balls or Concretions to 6 cm dia. become obvious.		547.2	547.0 bc: 65° to CA 548.1 bc: 60° to CA	Ca + Sil ± Py (2)		547.7 548.2		548.2 Core oriented Cont use
555					Vein + div Py (3%) Va Sp (1%)	550.2 bc: 70° to CA			550.2 551.4 554.2		

6451163

PASMINCO EXPLORATION — DIAMOND DRILL HOLE LOGGING — Input

Hole_ID	MS8	Project	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	[illegible]	Date	4/6/99

Depth	Lithology Code	Lithology Colour	Comments	Alteration (Up to 3 codes w. intensities (1-3))	Mineralisation (Up to 3 codes with %)	Structure	Veining	Faults		Graphic Log	
					Vn+dis Py (1) Vn Sp (tr)	558.0 β_o: 55° to LCA			558.1 557.2 559.0		
560		Black Srty	Black shale as described above; Core is deformed bedding @ 559-559.1 and 557.2-559.0		Vn+dis Py (3?)	560.0 β_o: 70° to LCA					
			#561.9m: Black shale geochemistry sample (collected by Marcus Hope) 561.9		Vn Sp (tr?) Vn ab (tr) Vn Sp (1?) 561.6 561.9				561.9 Abrupt carbonate		
565		Black, Srty. Green	Black shale (poorly laminated) interbedded with thin (<2cm) beds of calcareous mudstone (? limestone) Calc. mudstone beds are irregular, ? slumped and may be discontinuous. Also present are calcareous 'balls'.		Vn+dis Py (7?) Vn+dis Sp (3?) Vn gn (0.5?) 565.8	565.0 β_o: 70° to LCA	Ca+Sil ± Lithotube (2)				565.1 Core orient Unit use.
			Nail mineralisation in various 'limestone' beds. Mineralisation also in carbonate matrix zones of hydrofracturing & angular black 'clasts'	567.0	Vn+dis Py (3?) Vn Sp (1?) Vn Py (1?)						# Carbonate beds appear to have around Some Nodule (Sl. parts mineralised)
			568.1 Shale is not strongly Calcareous.						568.1 gradational (over 0.2m)		
570		Black	#568.8m: Black shale geochemistry sample (collected by Marcus Hope) Poorly laminated black shale with fine (<1mm) carbonate specks; shale is Calcareous; more dk grey	Co specks in shale (1)	Vn Py (>1) Vn Sp (0.5?)	566.6 β_o: 65° to LCA 570.0 β_o: 65° to LCA					
			570.9 Nodule (<0.5cm dia.)						570.9 Abrupt, irregular Abrupt,		
		green, black	571.4 strongly altered Volcaniclastic Sl. ± shale clasts.	Chl Co (2)	Sp (3?) Py (5?)				571.4 irregular		
575		Black	Moderately laminated black shale with thin Volcaniclastic Sl. bed (574.5 - 576.6m), rare grey nodules and one thin (<0.5cm) Calcareous mudstone bed @ 574.6m	Co spots in shale (1) Chl Co (3) 574.4	Sp (0.5?) Py (3?) 574.7 Sp (1?) Py (2?) 573.9 Py (2?)	573.0 β_o: 50° to LCA 574.6 β_o: 45° to LCA	572.5 Co Sil ± Sphalite (3) 575.7		574.5 Abrupt 574.6 Abrupt		574.7 Core orient Unit use.
			575.6	Co Spk (2) 577.6	Sp (0.1?) 576.9			577.3/0.01/25/ sh	576.6 gradational (over 0.3m)		
		Grey Green Black	Interbedded black shale, calcareous mudstone and ? Volcaniclastic siltstone & rare grey nodule and zones of hydrate bx (Co matrix) 578.5		Py (3?) Sp (0.5?)	579.1 β_o: 40° to LCA	Co Sil ± Py (2) Bsp		579.3 gradational (over 0.5m)		
580		Black, grey	moderately laminated black shale & rare grey nodules to 0.5cm dia.		Sp (tr?)						

6451169

PASMINCO [redacted] .ORATION

DIAMOND DRILL HOLE LOGGIN[redacted]

Input

Hole_ID	MS-X	[redacted]ject	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	Angus	Date	23/x/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
		Dark Grey	Dark shale in core	Ser (2)	Py (3f) Sp (tr)	S1@ 5° to Ln	Qz + Sil ± Py, Sp (1)		S11.9 Abrupt ingress		→ Massive Qz veins replaced by Py ± Sp
		Dark Grey	Undeformable sediment like Dark/grey shale. Is Dark shale core clasts. Sandstone laminae preserved	Ser (2) Chl (2)	Py (3f) Py (1)	S1@ 35° to Ln			Transition Abrupt		Core clasts replaced by Py ± Sp (pyrite in SS); Mineralisation = Py ± Sp replacement veins = Py ± Sp ± Qz
585			SS	Sil (1) Chl Ser (2) Ca (1)	Py Sp (1f)				S13.4		
					Py Ser (1) Py Ga (tr) Py Sp (tr)						
570					Py + Sp (tr)						
		Pink Green	Quartz-feldspar-porphyry; more strongly altered than normal massive porphyry; relict ud. ± Calcite (into Ln) Qz may be strongly Ser alt. Matrix + feldspar then we all recessively altered	Sil (1) Ser (2) Chl (2) with relicts	Py (3f) Py Ga (1) Py (1) Py Sp (tr) Py + Sp (tr)		Ca ± Sil ± chl (2)				
195											
60					Py Sp (tr)						
605											

PASMINCO [redacted] ORATION

DIAMOND DRILL HOLE LOGGING [redacted]

Input

Hole_ID	MS9	[redacted] ject	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	AWN	Date	23/4/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
60											
65											
70			Quartz-feldspar-porphyry (as above) Carbonate all as veinlets & Qtz and fracture fill Qtz.	Sil (2) Ser (2) after fel Chl (2) after mafics Ca (veinlet 1-2)	Py, Mo tr (tr)	(1st Hmb trends? ± 35° to Lca.	Py+Sil ± Chl (2)				
75						Lca to Hmb trends ± 30° to Lca.					
80											

PASMINCO E[redacted]ORATION

DIAMOND DRILL HOLE LOGGIN[redacted]

Input

Hole_ID MS-8	[redacted]ject
Hole_Type	Tenement_No.
Year	Prospect
Geologist Aaron	Date 26/9/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
635							Co+sil ±chl (2) 639.0				
640							Co+sil ±chl (1)				
645		Pal Green	(Rosette-feldspar-porphyry (or dacite))	Sil (1) ser(2) after fd. Chl (1) after matrix	644.0		644.2				Quartz stockwork
650		648.5 Green Grey		Sil (2) Chl (2)	Va Py (1-2) 649.5 Va+dis Py (1-2)		Co+sil+Chl (2) 648.4 Co+sil+Chl (3)				
655		655.1 Red, grey 655.6 Green Grey	Volcaniclastic Sandstone (i.e. thinly, wavy, ter-mil Py?) interbedded with thinly-bedded slate and minor Volcaniclastic siltstone. No obvious sedimentary contacts between beds are clearly bt. irregular.	Sil (2) ser (2) Vol: chl ser (3) 654.1	Va Py (2?) Va+dis sp (0.5-1) 655.2 Va Py (1?) Py (3?) sp (3?) Py (1?) sp (1?)	655.0 bedding to LCA. 655.7 bedding to LCA.	655.7 Co±sil (2)	657.6 Pegmatite (over 0.5m)			

Drill Log.xls

PASMINCO EXPLORATION

DIAMOND DRILL HOLE LOGGING

Input

Hole_ID	MK1	Project	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	AmA	Date	20/4/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %					
		Strong grey	658.6 Volcaniclastic mudstone + shale as above	Unit: chlsr (3)	Py (1) D Sr (1?)					
					Py (1?)	666.4 Sc: 45° to Ca	Co ± Sil (1)		657.6 Abrupt Contact	
					Sr (1?)	667.6 Sc: 35° to Ca	667.2			
		Green	interbedded with Volcaniclastic (ash + Cht beds) and thin Volcaniclastic sandstone units (graded - fining upholes)	Sil (2) Chl (2) Ser (1)	669.1		Co ± Sil (1)			
660						669.5 Sc: 50° to Ca				
			basal sandstone unit. Contains coarser lithics and Pumice to 1 cm dia. Lithics mostly Strongly ktk-hem altered	661.3	Py disem (1?)	669.4 Sc: 55° to Ca				
				Sil (2) Chl (2) ktk-hem (1)	Sr (0.5?) Py	662.5 Sc: 40° to Ca	662.5 Co ± Sil (2)			
665					662					
		665.4		665.4	Py (3?) Sr (tr)	665.4 Sc: 35° to Ca			665.4 Abrupt Contact	
		Green-Pink	Volcaniclastic Sandstone, Pebbles, unsorted. Clasts of Rhyolite + chlorite Pumice. Some narrow <20cm cm intervals.	Chl (2) Sil (1) ktk-hem (2) (2) Clasts.	666.6 disem Py (0.1?) Sr (tr) Ca (tr)		666.6 Co ± Sil (1)			
670				670.0			667.6 Co ± Sil (2)			
				Chl (2) Sil (1) ktk-hem (1)						
		672.8		671.7	672.9		Co ± Sil (2)	676.0		
				Ser (3) with Py Chl (2) Sil (1)	Py disem (1?)		672.9 Co ± Sil (2)	676.1		
675		Green								
		677.0		677.0	Cpy (1?) Py (1?) 677.0		Co ± Sil (1)			
		Green Cream		Chl + Sil (2)	Py (1?) disem					
680		679.6 Silica, Py		679.6	679.6					

PASMIN[redacted]PLORATION

DIAMOND DRILL HOLE LOG[redacted]

Input

Hole_ID	183	Project	[redacted]
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	A Min	Date	3/5/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
		Green, Pink	Volcaniclastic Wackstone as above	hem(khl)(1) sil(2) chl(2)	Py (tr) Sp (tr)		Co+sil (1)		692.0 Abrupt. Conformable		692.0 hem(5) on contact
695		Green Pink.	Sheared volcaniclastic sandstone unit, clast contact dominated by fine ± Pale lava clasts, except for lower 60cm clast Set-supported, brown-cream Carbonate-rich (Limestone) clasts are dominant. Pumice is aphanitic.	hem(kln + sil clasts (2) sil (1) chl (2)	Sp,gn (tr) Py (tr) Sp (0.5%) Va. Sp+Gn (0.1%) Va. Py (tr)		Co+sil (1)				
690		Green Lam.	Pumice-rich silicified Volcaniclastic sandstone/ siltstone. rare pink-green flow lithics, Pumice is feldspar + quartz-phyric.	ser (3) ± Py. Sil chl (2)	Sp+Gn Va (tr) Py (tr)				690.9 Base		
685		Green Grey	Massive, embedded clasts silica altered volcaniclastic sandstone. Not clear that protolith - could have been a lava even - some possible quartz-eyes. chloritic domains contain more siliceous domains	Chl (2) Sil (2-3)	Va + Sp+Gn (tr) Py (tr) Va + Sp+Gn (0.5%) Py (tr) Sp (tr)	690.2 So? = 60° to CA	690.2 Co+sil ± chl (2)		690.2 Abrupt. Conformable		
700		Khaki-green, Grey	696.5 Volcaniclastic, poorly laminated. rare - thin (<0.3cm) chloritic sandstone granule interbeds.	Chl Ser (2) Sil (1-2)	Sp Va (5%) Py, Cpy, Gn (1%) Sp Va+Gn (1%) Py (1%) Sp Va+Gn (0.5%) Py (0-5%) Gn (tr)	696.5	696.5 Co+sil (2) 697.9 Co+sil (1) 699.9	696.5/0.01/45/Base 697.6/0.05/40/Py	696.5 Abrupt, faulted?		F F
705			Two fossil Carbonated 'chords' fracture		Py Va (1%) Sp Va (tr) Py Va (5%) Sp Va (0.5%) Py (tr) Sp+Gn Va (tr)	700.3 So = 60° to CA 701.6 So = 60° to CA 704.0 So = 45° to CA	Co ± sil (2)				Note: sulphide rare in Va-Sp Sp all (khaki) zones

64517

PASMINCO [redacted] LORATION

DIAMOND DRILL HOLE LOGGI[redacted]

Input

Hole_ID	MS-3	Project	
Hole_Type		Tenement_No.	
Year	1999	Prospect	
Geologist	RM·N	Date	4/5/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
710		khaki-green, grey	sub volcaniclastic: Poorly laminated. At 709.9, 709.6 are oval 'patches' of intense Co all with a selvedge of chl. alt. (Also Hosts mineralised) Patches are upto 10cm dia.	chl ser (2) sil (1-2)	Py tr (fn) 706.4 Py tr (fn) sr Va (0-1%) 707.6 Py tr blebs (1%) sr Va disem (0.5%) Py Va (fn) Co stockw	707.4 So: 60° to LCA	Co ± Sil (2) 706.4 Co ± sil (2) 706.7	707.5/0 oz/ 35 /Pb			
715			713.7		709.2 Py tr (fn) sr Va (fn) 711.5 Py tr disem (1%) sr Va (0.5%)	713.7 So: 65° to LCA			713.7 Abrupt Conformable / irregular		
720		green green	grey shale interbedded with fine volcaniclastic sandstone	Sil (1) Chl (1)	715.6 Py tr blebs (5%) sr Va (2%) 716.0 Py tr blebs (7%) sr Va (0.5%) 718.6 Py disem (5%) 719.6 sr Va (2%)	717.2 So: 50° to LCA 717.3 So: 55° to LCA 719.0 So: 65° to LCA.	Co ± Sil ± Py (1)	720.0/0 oz/ 40/ Ag			
725		khaki-green, grey	722.3 coh volcaniclastic ± rare Co vein/veinlets. 724.6	chl ser (2) sil (1-2) 722.3 724.6	Py disem (2%) sr Va (0.1%) Py tr (1%) sr Va (tr) 725.0	722.4 So: 60° to LCA. 722.3 So: 40° to LCA 724.6 So: 60° to LCA			723.3 Abrupt Conformable 725.6 Abrupt Conformable		722.0 core orient: 722.2 So: 75° to 310° mag 725.0 So: 70° to 330° mag
730		grey black	Poorly laminated grey shale ± minor, thin (< 5cm) green fine volcaniclastic claystone interbeds.	chl (2) ± sil. sil (1) ± sh.	Py tr blebs (1%) sr Va (0.5%)	726.0 So: 40° to LCA. 728.0 So: 15° to LCA	729.0 (a)Sil (1) 729.5 Cossil (2)	729.5/0.1/40/Ag			

6951753

PASMINCO EXPLORATION — DIAMOND DRILL HOLE LOGG[illegible] — Input

Hole_ID	MS-8	Project	
Hole_Type		Tenement_No.	
Year	1999	Prospect	
Geologist	A.M.N	Date	4/5/99

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
735					Py Vn tdisx (1%) sl vn (0.5%)	734.0 So: 45° to LCA.					
					734.2 Py disstn (2%) sl (vn) U/D	734.9 So: 40° to LCA.					
			* black shale geochemistry sample 5/10/99		Py disstn (2%) sl vn (2%) 736.8	735.9 So: 30° to LCA.					
740					Py disstn (2%) sl vn (0.5-2) 739.0 Py disstn (1%) sl vn (0.1%)	739.4 So: 20° to LCA. 739.9 So: 10° to LCA.					
		Grey Black	Variably laminated grey-black shale, ± minor thin carb volcaniclastic shale to siltstone	Sil (1) & Sh. Chl (1) & ser.	740.6 Py disn (0.5-2%) sl vn (1%) 742.2 Py (0.5-2) sl vn (1%) 742.7	741.2 So: 10° to LCA.	Cal+Sil (1)	742.2/0.1/°/Bk			736.1 Core Orient: 740.1 So: 70° to 060° mag 741.0 So: 80° to 060° mag
745								743.3/0.1/40/Bk 743.4/0.1/°/Bk		F F	736.2 Core Orient: No oval.
					Py disstn (2%) sl vn (0.1%)	746.4 So: 35° to LCA.					
750					750.1	749.0 So: 35° to LCA.		749.7/0.3/40/Bk,Py 749.8/0.2/°/Bk		F F	
					Sil (2) Py (2) 753.2			750.4/0.5/°/Bk		F	
					Py disstn (3%) sl vn (0.5%)	753.5 So: 60° to LCA. 755.0 So: 45° to LCA.					
755		Grey Green	754.0 Weakly laminated carb volcaniclastic ; thin (<0.5cm) thick siltstone interbeds.	753.5 Sil (2-3) Sil (2) chl ser (2)	754.1 Py (1%) sl vn (0.1%)	755.0 So: 55° to LCA.			754.0 graded bed over 10cm		

Drill Log.xls

6451179

PASMINCO EXPLORATION — DIAMOND DRILL HOLE LOG SHEET — Input

Hole_ID	MS-1	Project	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist	Amin	Date	5/6/99.

Depth	Lithology			Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log	
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %						
760		grey, green	ash volcaniclastic interbedded with volcaniclastic siltstone/ sandstone. Sst/sltst units have obvious lenticular crab.		Ag (1) Sl (coarse) Py vn (0.5-2) Sr disp vn (2%)	776.2 Sr 40° to LCA 778.2 Sr 45° to LCA	Consil + chert (2) Consil (1)	776.0/0.01/ 55° /Bk 776.0/0.01/ 40 /Pk	776.0 fault contact		F F
765		Grey black	well laminated green-black shale/siltstone	Sil, Chl (1)	Py disp vn (5%) Sr (fr) vn	762.2 Sr 45° to LCA 764.0 Sr 40° to LCA	Consil (1)				Abundant calcite veinlets in Sr. Note veins, especially those in shale also contain minor Cpy/Sphal
770		Green, grey	767.6 Dominantly sst volcaniclastic & graded volcaniclastic near base (comb thin (<5-10-15 cm) shale beds. well sst in 92 + 3d - physic	Sil, Chl (2) Sil (1)	Py disp vn (1%) Sr vn (fr) Sr fracture (0.2%) Py (fr) Sr vn (3%) Sr fracture (0.5%) Sr disp (2%) Py disp vn (fr)	770.0 Sr 45° to LCA 772.6 Sr 50° to LCA	Consil + chl (5) Consil (2) Consil + chl + Sr (1) Consil (2)	772.8/0.01/55 /Pk 776/0.1/?/Bk	767.6 gradational (over 0.2m) 772.2 fault 775.0 fault		"Breccia zones" & Amphibole alteration associated & Sp mineralisation
775		grey black	well laminated shale/siltstone	Sil, Chl (1)	Py disp vn (2%) Sr (0.5%)						
		black, white	775.6 fault zone/ shale		Sr (fr) gouge	776.0 Sr 60° to LCA	777.4	775.6/06/ : /Bk,Pk	775.6 fault.		F
		grey black	well laminated green-black shale 777.0		Py disp vn (2%) Sr disp (0.2%)	777.4 Sr 55° to LCA		777.0/0.01/55/Bk	777.0 gradational (over 0.4m)		F
780		Green green	sst volcaniclastic interbedded with minor thin (<0.3cm) shale and volcaniclastic siltstone unit	chl, Ser (2) Sil (1)	Py disp vn (3%) Sr disp vn (<1%) Py disp vn (<2%) Sr fracture (1%)	779.2 λ_1 = 61° to LCA.	Consil (2)				

Drill Log.xls

PASMINCO E[illegible]RATION

DIAMOND DRILL HOLE LOGGING

Input

Hole_ID MS-7	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist AMN	Date 6/5/99

Depth	Lithology		Comments	Alteration	Mineralisation	Structure	Veining	Faults		Graphic Log
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %					
385		Grey, green	ash volcaniclastic interbedded with minor shale and volcaniclastic siltstone	Chl Ser (2) Sil (1)	Py (1) blebs (1%) gn (0.5) Cpy (tr) Sp (tr)	390.9 Sp: 65° to CA	Carb ± chl ± qtz/carb (3)	391.1/0.8/70/ch	392.1 gabbroic (over 0.3m)	
390		Pink, green	Volcaniclastic sandstone ± ?lava/dyke clasts to 10cm dia. looks like a breccia in part. feldspar-phyric only.	glomerules: Sil Chl (2) some clasts: Sil, Ktz/Hem (3)	Py to 4dia (tr) Cpy tr (tr)		Carb + chl ± ktz/hem (2)			
395			(? top of CVC) - after C-H ⇒ looks more lava breccia like !!							
400			398.7 E.O.H.							
405										

645178

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	Queenstown
Hole_Type	Diamond	Tenement_No	
Year	1999	Prospect	Beatrice
Geologist	Kim Denner	Date	3/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
0									
							0.0 - 38.0m Dark Grey Quartz (3-5mm), feldspar / 3mm laths and blocky (often agglomeroporphyritic), hornblende phyric porphyry. Main chlorite alteration of the mafic minerals and lesser alteration of the feldspars.		
5									
							Bdx		
10									
									3mm Cb veinlet C30 3-5mm Cb veinlets
15									
20									

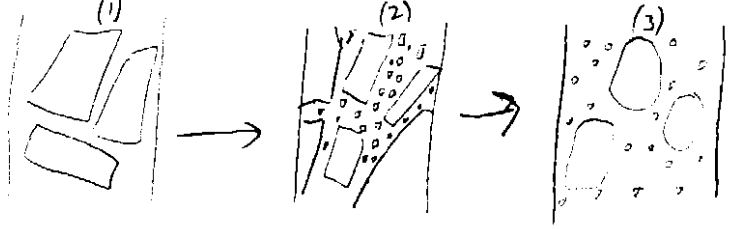
DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	3/8

Sample #

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
25	331								
30							29 – 34.3m orange-yellow Sericite alteration.		
35						-FOx		Se	
40		770					38.0 – 73.5m Brecciated quartz feldspar porphyry. Breccia progress from simple crackle breccia (1) crackle breccia with milled/subrounded intraclast breccia (2) and subrounded clasts with milled/intraclast breccia (3). The matrix to this breccia is a dark black chlorite altered ? that was		



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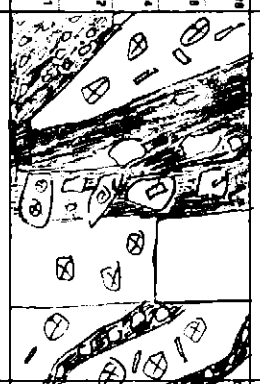
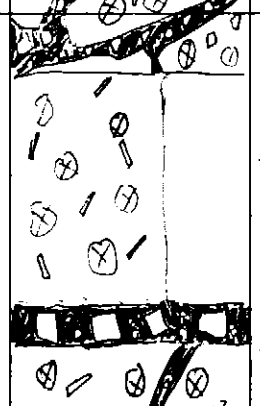
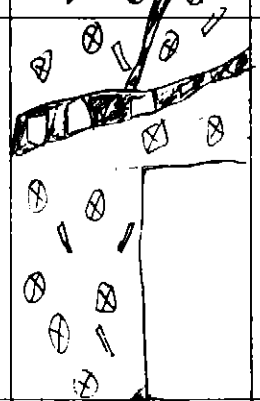
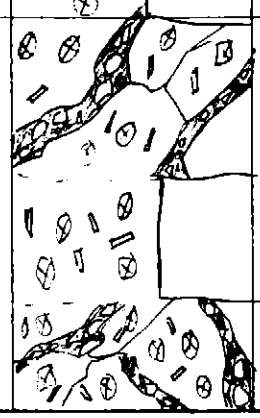
3/20

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	3/8

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
40						mm			
		771					Probably a black shale. The brecciate style and localisation of the breccia indicates that it formed from fluid overpressuring which varied from passive → crackle breccia small explosive → milled breccia		
		772							
45		773							
							The breccia probably formed when the quartz ridge [illegible] flowed over wet sediments and water in the sediments boiled		
		774							
		775							
50									
		776							
		777							
55		778							
									
		779							
		781							
60									

645181

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	3/8

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
60						mm		Structure	
		782							
		783							
65		784							
		785					c Thin breccia is well rounded and has no black shale,		
		786							
70									
		787							
		788							2% disseminated py.
							- 73.5–78m.		
75		789					black shale with ranging proportions of grey-white sandy intrabeds typically < 5mm bedding is very disrupted (30%) Contains carbonate	50 045	
		790							
		791						50 065	
80									

645182

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	3/8

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
80									
		792					78.0 – 90.5m black shale, similar to the above unit but much less 5-10% sandy interbeds, contain carbonate.		
		793							
85		794							
		795						So 027	
		796							
90									
		797					90.5 – 92m, very irregular wavy sandy lens to 25mm, within black shale.		
		798					92.0 – 105m as at 73.5-78m.	So 032	
95								So 045	
		799							
		305 943							
		944						So 027	5% Py 1-2mm
100									

645183

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DIAMOND DRILL HOLE LOG

Hole_ID M59	Project
Hole_Type	Tenement_No
Year	Prospect
Geologist	Date 3/8

PASMINCO EXPLORATION

#305

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
100									
		945						So 00	
							102–104m So ~ // to bedding intersects an 25mm So parallel richly pyritic sandy bed,	So 37	
		946						So 00	1%
105		947						So 032	
							105 – 115.5m as at 78–90.5m, irregular bedding.		
		948							
						0° 0.4°	108–108.5m black shale in brecciated vein by 3mm of rounded grey clast and siltstone		
		949					108.5–119.8m as at 73.5–	So 037	
110									
		950					78m.		
		951						So 044	5mm 1%
115		952						So 050	
								So 00	
		953							
		954					– ≤ 50mm pyritic (10%) calcareous nodules,	So 22	
120									

645184

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	4/7/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
120							119.8 – 201.5m Black shale with 5-10% sandy interbeds.	So 32	
		955							
		956							
125							124.8 – 125.1m. Pyrite laminated beds, at 125.1m 10mm wide syngenetic graded bed.	So 29	
		957							
		958						So 68	
		959							
130							130.8 – 131.4m: pyrite laminae interbeds to 4mm, pyrite in partially to totally replacing selected beds 131.6m thick bands,	So 31	
		961							
		962					135.7m So So	So 40	
135									
		963					135.7 – 136.0m steep breccia zone, matrix 25mm blocks of shale, clasts are dominantly limestone? and black shale with rare cherty clasts banded 963 – 136m		disseminated Gn II Py
		964							
		965						So 58	min Py
140									

645185

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	4/8

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
140									
		966						So 54	
		967							
145		968						So 50	
		969							
		970							
150									
		971					From 152 – 173m (22mm) small graphite stringers and [illegible]	So 56	
		972							
155									
		973							
		974						So 38	minor py
		975							
160									

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MSQ	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	4/8

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
160									
		976						So / 42	
		977							
165		978							
		979					165 – 168.3m small (typically c 10mm) carbonate filled tension gashes, minor pyrite	So / 42	
		981					169 – 174m graphitic fracture surfaces.		
170									
		982							
		983							
175		984					· 174.4m – graded bed, facies explde.	So / 49	
		985							
		986					* black shale sample (collected by Marcus Hope)	So / 33	
180									

645187

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID M59	Project
Hole_Type	Tenement_No
Year	Prospect
Geologist	Date 4/8/79

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
180						mm			
		987						So 32	
		988						So 22	
185									
		989							
		990							
		991					188.1m – 3mm So parallel py veinlet with a core of dark black mineral Sphalerite? 189.1 – 189.4m, 3-5mm carbonate veinlet,	So 35	3mm (15) py cb
190									
		992						So 41	
		993					Broken and 192.5 – 197.1m faulted zone with black shale, abundant graphite on fracture surfaces. 30-50mm crush zones at 196.5m and 197.05		
195		995							
		994						So 37	5mm py
		995							
200									

645188

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	9/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
200						mm			
		996					201.5 – 259m Black shale interbedded with orange-yellow massive ashy beds ≤ 10cm. From 201.5 – 201.6 a sandy limestone bed is intersected and From 203.1 – 204.6m irregular	So 39 S. 34	
		997							
205								So 38	
		998							
		999					204.6 – 205.4 broken faulted zone 205.4 – 206m broken faulted zone abundant 10-20cm pyrite sandy limestone beds intersected.		
		330							
		601							
210								So 38	5mm py
		602							
		603							
215		604						So 22	
		215.9					215.9 – 227.3m Relatively massive black shale unit.		
		605							
		606							
220								So 40	

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DIAMOND DRILL HOLE LOG

Hole_ID M59	Project
Hole_Type	Tenement_No
Year	Prospect
Geologist	Date 4/8/99

PASMINCO EXPLORATION

330

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
220						mm			
		607					221.2m 10cm Crush zone	So 45	
		608					* black shale geochemistry sample.		
225								So 22	
		609							
		610					227.3 – 238.2m Faulted and disrupted graphitic/weakly pyritic black shale. Crush zones and the extent of deformation increases towards the porphyry contact.	crush 3m	
		611							
230									
		612					Common variably pyritic limestone nodules from 230 – 233.1m, graphite occurs predominantly on shear planes not the bulk of the shale. Siltstone/graphitic shale 234.5 – 234.8m. Pyritic limestone		
		613							
235							Contact with porphyry is sharp		
		614							
		615							
			238.2						
240		616							

645190

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	5/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
240									
		617					238.2 – 247.2m Light – dark green quartz (≤ 4mm), blocky feldspar (≤ 4mm), hornblende (altered) (≤ 5mm) phyric porphyry.		
		618							
245									
							247.2 – 300m Mottled dark green – red quartz feldspar phyric porphyry as above. The red colouration is due to K-feldspar alteration which is	K-fld	
250									
							domainal but the domains increase downhole. The domains are orientated at 54° to VCA. The quartz size increases downhole.		
255								increasing intensity	
260									

645191

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	5/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
260									
265									
270									
275									
280									

645192

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	5/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
280									
285									
290									
295									
300									

645193

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	5/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
300									
		619					from 299 – EOH the porphyry is magnetic, contains ? of magnetite, 300.0 – 387.5m		
		621					Hematite red quartz feldspar porphyry as above, this unit is strongly feldspar	K,	
305		622					altered (probably albite), this unit also contains grains of magnetite (altered) quartz yellow Carbonate vein as intersected from 329 – 348m.	Hl	
		623							
		624							
310									
		625							
315									
320									

645194

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID MS9	Project
Hole_Type	Tenement_No
Year	Prospect
Geologist	Date 5/8/95

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log mm	Comments	Alteration	Mineralisation
320									
325									
330									9|3|Cb 49
335									
340									7|3|Cb 49

645195

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	5/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
340									
345									
350									97 cb. 44
355									
360									

645196

19/20

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MSG	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	5/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
360									
365									
370									
375									
380									cb

645197

20/20

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS9	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	5/8/89.

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
380									
385									
						387.5			

645198

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type	DIAMOND	Tenement_No	
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	1st October 1999

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
0									
		597					0.0 – 21.2m. Weakly pyritic, black shale. Minor carbonate veining. The shale is badly broken per 0.0 – 12.8m.		
5		598							
		599							
10									
		901							
		902							
15									
		903					* black shale geochemistry sample. Sa 013		
20		904							

645199

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist	KPD	Date	13th October 1998

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
20						0.1 1 mm 4 16			
		905					21.2 – 71.5m. Quartz feldspar porphyry mottled pink green. * Very sharp contact with overlying black shale. Quartz crystals 3-4mm and Pink tabular feldspars 2-3mm. * From 65m → 71.5m the porphyry becomes increasingly brecciated toward the fault.	Grap/shale contact 026 Wk K-Spar Chl.	
25									
30									
35									
40									

645200

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist	KPD	Date	1st October 1990

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
40						a·f f mm 2 4 16			
								Weak K-Spar	
45									
								Chl	
50									
55									
							– 56.1m sized down to NQ,		
60									

645201

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type	DIAMOND	Tenement_No	
Year	1999	Prospect	Beatrice
Geologist	KPD	Date	2/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
60						0 1 1 mm 2 4 10			
65									
70							65 - 71.5m qtz feldspar porphyry breccia, clasts from 2mm - 20mm are subrounded matrix is dark chlorite.		
75							71.5 - 98.2m. Strongly broken, quartz carbonate veined black shale, Major 20cm pug zone 71.5 - 71.7m. The entire interval has 1-5cm pug zones. Major quartz carbonate veins at 83.8 - 88.4, 96.6 - 97.9m. Itat Creek Fault	qtz, cb	
80								sil	

645202

5/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement No	6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	2/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
90						0.1 1 mm 2 4 16			
85									
90								Alt-carb Vein	
95								Sp/QTZ	
100							98.2 – 256.1m Black Shale.	Sil-carb	

645203

6/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement_No	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	2/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
100						0.1 1 mm 2 4 16			
							This black shale unit is unmineralised, has as thin white carbonate interbeds, (This may help with correlations). Minor thin calcite veins. From 98.2 – 113.2 the unit is still broken with ruggy sheared zones.	So/011	
105									
								So/019	
110									
115							* black shale geochemistry sample.		
								So/024	
120									

645204

7/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Quondong
Hole_Type	DIAMOND	Tenement_No	6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	2nd October 1999

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
120						0 1 mm 2 4 6			
								So/028	
125									
							* Sandy bed grades uphole	So/018	
								Sericite/Zn Vuggy 16/028	
130									
								So/020	
135								So/024	
140									

645205

8/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement No	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	2/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
140									
								So/042	
145									
								So/049	
150									
								So/018	
155									
								So/028	
160									

645206

9/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement_No	B/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	2/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
160						mm 2 4 16			
								So/029	
165									
170								So/036	
175							171.6 – 183.4m broken core associated with a shear/fault zone 179.5 – 192.4m		
180									

645207

10/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement_No	EL 6/98
Year	1999.	Prospect	BEATRICE
Geologist	KPD	Date	2nd October 1999

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
180						0.5 1 mm 2 4 16			
185									
								So/02A	
190									
195								So/03A	
200								So/009	

645208

11/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement_No	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KRD	Date	2/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
200									
205									
210									
215									
220									

Sc / 34

Sc / 016

Sc / 032

020 / Rig Clean

Sc / 018

645209

12/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement_No	6/58
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	2/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
220									
								So/032	
225									
								So/033	
230									
235							2337 – 2353, coarse blocky Stale mononict breccia, angular blocky clasts to 30mm.		
								So/032	
240									

645210

13/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Quinalow
Hole_Type	DIAMOND	Tenement No	E/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	2/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0·1 1 mm 2 4)	Comments	Alteration	Mineralisation
240									
								S_0 / 041	
245									
								S_0 / 042	
250									
							* black shale geochemistry samples.	S_0 / 054	
255									
							-256.1m – 257.8m quartz feldspar porphyry, irregular but sharp contacts, minor veinlets in pink silica	S_i	
							257.8 – 263.6m black shale, carbonate-pyrite nodules at contacts with the porphyry.		
260									

645211

14/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement No	6/98
Year	1999	Prospect	BEATRICE
Geologist	KD	Date	2/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
260									
		595					263.6–311.6 mega quartz (1 to 1 cm) Feldspar porphyry.		
265		596					Fault Zone 268.6–290.5		
								K-Sp	
270									
275									
280									

645212

15/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queensland
Hole_Type	DIAMOND	Tenement_No	6/98
Year	1999	Prospect	BEATRICE
Geologist	KJD	Date	3/10/99.

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0.1 1 mm 4 16)	Comments	Alteration	Mineralisation
280								K-Spar	
285									
290									
295							290.5 - light green - unaltered.		
300									

645213

16/33

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Quodnoton
Hole_Type	DIAMOND	Tenement_No	6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	3/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0 1 2 mm 4 8)	Comments	Alteration	Mineralisation
300			331						
305									
310		593					The bottom 50cm of the Porphyry contains abundant dissaminated Sphalerite		
		594					-311.2 - 349.8m Well bedded weakly pyritic blackshale; carbonate nodules.	Ser	Sp
315									
320								8-10° fault	

645214

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MSD	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (.1 1 mm 2 4 16)	Comments	Alteration	Mineralisation
320									
								So / 027	
325									
								So / 022	
								So / 045	
330							weak Syn sedimentary breccia		
								So / 027	qtz-carb
335									
							* black shale geochemistry sample.		
								So / 044	
340									

Core orientated from 320.4 – 330m. Note earlier measured orientations are wrong.

320.4m	fault	82 → 010°	322.4m	So	34° → 020°	328.5m	So 56° → 250°
320.6m	So	66 → 200°	322.6m	1mm ch	37° → 064	328m	So 40° → 200°
320.6m	1mm ch	22° → 196°	323.6m	So	56° → 340°		
321.5m	So	58° → 320°	325.2m	So	54° → 340°		
321.6m	10mm ch/qtz (granular)	50° → 032	326.2m	crenulated So	58° → 325°		
324.8m	So	54° → 340°	327.0m	So	54° → 317°		

645215

18125

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement No	3/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	6th Sept 1999.

Depth	Lithology Code	Lithology Colour	Sample #	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
340							Qal 1 mm 2 4 16			
									S- / 038	
345										
								347 - 349.8 - Fault Zone.		
350			348					349.8 - 373.7m. (2-5%) Pyrrhotite>Pyrite black shale with carbonate nodules common particularly at the top of the unit. Pyrrhotite and Pyrite occurs as 2-3mm blebs concentrated within the cleavage. Pyrrhotite is the dominant sulfide.	S1 / 028	py (1%)
			350/352				py. Q carbonate			
			633						So / 032	calcite
355							calcite/py			py/po
			634							
			635				cb py 14cm		028 / So/S1	calcite
			636							
360										

645216

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type		Tenement_No	
Year	1999	Prospect	
Geologist	KPD	Date	6/9/99.

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
360						00:1 1 mm 2 4 16			
		636/637				363.5-363.8m Sandy carbonate/ py/po.	363.8m 3-5mm Sandy carbonate interbeds plus slabs (to 20mm x 5mm) and balls of grey carbonate.	Sc 27	Po Py/Po
		638							
366								Sc	
		639						22	
		641				22mm 17		Sc/Si 18	
		642					From 369 - 373.7m minor pyrrhotite, predominantly pyrite.		
370						10mm			
		643							
		644							
		3717					- 373.7 - 374.8m: major zone of faulting with fracture planes subparallel to the core axis.		Fracture
		645							
375		374.8							
		646					374.8 - 376.3 - crystal lithic sandstone - quartz, clay crystals, limestone lithics.		
		376.3					376.3 - 386.0m. Uphole fining graded mass flow units. Basal Laminae (to 10mm x 2mm laths) lithic (yellow - chloritic?) clasts with irregular borders in a fine grey feldspathic matrix, grading uphole into poor - well bedded light grey clayey siltstone.		
		647							
		648						14 Sc	
380									

645217

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type		Tenement_No	
Year	1999	Prospect	
Geologist	KMP	Date	6/9/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
380									
		649						Sa 33	
		650							
385		651							
		652					386.0 - 394.6m As at 376.3 - 386.0m but more lithic rich at base.		
390		653							
		654							
		655							
395							394.6 - 402.1m Similar to the coarser parts of the above unit with dark green lithics and pale yellow clasts in a grey silty matrix, major distinction is that this unit contains patches to 15mm of light orange sphalerite which appears to be replacing a particular clast type. Towards the base of the unit is silicified.	Si	Patches to 15mm but typically 1-2mm of sphalerite.
		656							
		657							
400		658							

645213

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	6/9/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
400						0.1 / 1 mm 2 4 16			
		330659				pumice			Spk
		661				lithic volcanic,	402.1 – 407.0m Variably brecciated pale grey carbonate. Non brecciated parts contain dark green wispy foamy clasts. Superficially this unit has no obvious sphalerite.		
405		662							
		663					407.0 – 416.2m minor sphalerite. Interbedded pale green, locally foamy rich (and lithic foamy has abundant quartz crystal) volcaniclastics and light-dark grey sphalerite rich (3-5%) silicified epidote? lithic (2-5mm) grit.	Si	Spk
		664							Spk
		665							Spk
410		666						409.2 Si	Spk
		667					Sphalerite is probably a clast replacement. From 412 – 413.7m this unit contains carbonate clasts some of which contain pyrite and sphalerite (partial replacement?).	410.2 410.6 Si 410.9	Spk
		668						412	
		669						Si	Spk
		670							
415		671						413.7	
		672					416.2 – 425.9m blue grey siliceous (silicified) ashy volcanic → lithic breccia/conglomerate. Clasts are angular to subrounded to 30mm and include limestone, feldspar crystal rich foamy, and pale white volcanic clasts. This unit contains abundant blebs and clasts of sphalerite disseminated	Contact 410	
		673							417.2 Spk
		674							Spk
		675							418.6 Spk
420		676							Spk

Spk limestone.

645219

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenstown
Hole_Type	DIAMOND	Tenement No	6/98
Year	1999	Prospect	BEATRICE
Geologist	KDD.	Date	9/9/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
420						0.1, 1 mm 2 4 10			
		677					throughout the coarser parts of the unit. The size of sphalerite clots is similar to the clast size suggesting the sphalerite is replacing a pumiceous clast type.	Si	Sph. 422.5m minor Sph.
		678 4225					The obvious first choice is replacement of the limestone however many limestone clasts are totally unaltered and are surrounded by sphalerite. So what is the Sphalerite replacing?	(Qtz) Sc contact	
		679							
425		681					425.9 – 436.2m.	contact (0.25)	Sph. Sph.
		682					light green to cream volcanic with elongate patches to 10cm x 4cm of yellow-green wispy sericite with abundant quartz crystals. These are interpreted as large pumice clasts, ⇒ Pumice Conglomerate. Matrix consists of .5mm white flecks		
		683					⇒ feldspar?, and minor 1-2mm quartz crystals.		
430									
		684					Sphalerite occurs disseminated throughout the unit and is of a similar size to the matrix clasts.		~0.5% – 1% Sph.
		685					@ AT 427.4m, A zone of dark silicified sphalerite rich material similar to 416.2 – 425.9m cross-cuts a pumice clast ⇒ silicification event is post diagenesis		
435									
		686 AH7							
		687					436.2 – 453.6m. light green to cream volcanic ⇒ quartz crystal, pumiceous, minor lithic breccia. Abundant subrounded quartz crystals 1–2mm, green sericite quartz crystal pumice clasts elongate parallel to cleavage and minor pale white lithic clasts (to 15mm) in a Chl-Qtz crystal rich matrix.		
		688							
440									

645220

23133

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queenston
Hole_Type	Diamond	Tenement_No	EL 6/98
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	9/9/1999

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0.1 1 mm 2 4 16)	Comments	Alteration	Mineralisation
440									
		689					Sphalerite occurs as 2-3mm disseminations throughout the unit at 0.3-0.5% Spl.		0.5% sph
		690							
		691							
445									
		692							
		693					– quartz phyric vega pumice.		
		691					From 448m patches of carbonate alteration (2 0mm x 5mm) become common, lithic clasts also become more com—		
450		695							
		450.6						cb	cb, qtz, spl
		696					450.6 – 450.8, 451.4 and 451.9 – 451.9m the unit is cut by late stage carbonate-quartz dark sphalerite veins.		0.5 cm cb, qtz, spl (0.5?) cb, qtz, spl
		451.9							
		697							
		452.6m							
		698					– 453.6 – 464.9m Light green sericite altered quartz crystal, pumice, rare lithic volcanic.		
455		699							
		331					From 457.7 (040 LCA) thin S_1 // zones/veins of wispy sphalerite/galena approximately 1% Spl+ga.		2-3cm Spl
		501							
		502							
		503							
		504					459.3 – 460.1m dark brown sphalerite and galena veined, carbonate altered volcanic (5% Zn, 2% Pb)		Spl Spl-ga
		505	419.1						

645221

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (1 mm, 4, 16)	Comments	Alteration	Mineralisation
460		461							
		506							
		507							
		508							
		509							
465		510					464.9 - 476.3m		
		511					Lithic conglomerate grading up hole to a lithic grit. Clasts are limestone 40% chert 30% qtz quartz crystals 30% mineralised chert are most dominant at basal contact ⇒ rip up clasts of underlying unit. Large black shale clasts to 15cm near top of the unit		
		512							
		513							
		514							Sph.
470		515							
		516					Fragmental clasts and wisps of sphalerite throughout the unit but particularly in the coarse basal part		
		517							
		518							
		519							Sph
475		521							
		522					476.3 - 483.6m Limestone breccia. Elongate angular clasts of dark limestone to 4cm in a light-dark green sphalerite rich, silicified - carbonate matrix.		
		523							
		524							sph 3%
		525						Si/Ch	
480		526							

645222

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0·1 1 mm 2 4 10)	Comments	Alteration	Mineralisation
480									
		527							
		528							
		529				483·6	483·6 – 488·0 m. pale grey to light brown fine grained ashy volcanic with minor feldspar crystal sandstone? interbeds.		2-3mm sphalerite discontinuous veinlets.
		530						20° ca / So	
485									
		531							
		532							Sph
		533					488·0 – 490·1m. dark grey – green lithic (volcanic clasts, black shale + limestone) breccia, disseminated sphalerite.		
		534							Sph
490									
		535					490·1 – 492·3m light green grey volcanic with clasts to 10cm of 3-4% spotty quartz crystals (30%) in wispy dark green sericite. These are interpreted to be pumice clasts → pumice breccia		
		536					492·3 – 505·2m. Pale green to grey ashy volcanic, major fault from 494·9 – 497·2m. Only minor sphalerite in this unit.	90 / So	
495									
		537						Ser	
		538							
		539					499m sphalerite filled fractures over 10cm		Sph
500		541							

645223

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
500						0.1 1 mm 4 16			
		542							
		543							
505		544					505.2 – 519.2m blue grey black chlorite altered ashy volcanic or semi massive poorly bedded black shale, Minor feldspathic sandstone interbeds.	wk Ch?	Aspy. Py 0.2% 1 10cm sph py, ch 1-1 Po spotting.
		545							
		546							
		547							
510		548							
		549							
		550					518 – 521.4m oriented core 518m So 57° → 310° 518.6m 20mm qtz/ch, 62° → 145° 518.7m 2cm Sph/ch, 62 → 175° 518.9m " " , 86 → 200°	bleached contact 030 So 034	
515		551							
		552					519.1m Contact 60° → 320° 519.2m So 54° → 300° 521m So 47° → 300° ★ 517 – 519.2m the unit is brecciated and contains abundant 2-3% Sphalerite ± ch ± ga veinlets.	So 035 strong chl	10mm Sph, ch, ga 017 67 → 143°
		553				Sph Sph			
		554							
520		555							

645224

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10'	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0.1 1 mm 4 16)	Comments	Alteration	Mineralisation
520									
		555					519.2 – 529.7m gradational contact from black shale → light green grey sphalerite poor ashy volcanic. Badly fractured in places.	So /017	
525									
								So (022) /	
530							529.7 – 533.1m poorly bedded coarse silt - fine sandy volcanic		
		537 V						So /032	
		556					533.1 – 536.0m pyritic carbonate sphalerite veinlet chloritic black shale/ashy volcanic.		
535		557						Chl	ch/sph
		558							
						ORIENTATED SEE ← FOR DETAILS	basal fault at 010 → VCA, Sph 11b fault 536.0 – 548.4m		
							light grey ashy volcanic, well bedded from 536.0 – 541m and massive 541 – 548.4m. unmineralised.		
540									

536.4 – 538.3m oriented core,

536.9m	So	68° → 320°
537.2m	So	70° → 320°
537.4m	So	70° → 316°
537.6m	So	64° → 300°
537.5m	2nd Cb	84° → 253°
537.8m	1st Cb	36° → 120°
537.9m	So	61° → 320°

drillog

645225

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	Queanbeyan
Hole_Type	DIAMOND	Tenement_No	3/98
Year	1999	Prospect	BEATRICE
Geologist	KDD	Date	30th Sept 1999

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
540						6 1 mm 2 4 16 8			
545									
550							545.4 – 558.4m Well bedded pyritic black shale,		
555								So / 61 ; So / 047	
560							9½/fold sweatout vein closely cross cut by 2-3m Cb/Sph veinlet 558.4 – 559.9m brown-green well bedded ashy volcanic	So / 036	

645226

Core orientated from 553.8 – 561.2m. Orientation marks at 554.1 and 560.4m are very good and ± 5°

553.8m	25mm py shear	69° → 258°
554.2m	So // py veinlet	59° → 250°
554.3m	So	50° → 292°
554.4m	Py, Cb, Sph	40° → 304°
554.4m	1mm Cb	62 → 005°
554.9m	10× py/cb/Sph	48 → 290°
555.3m	Spy/Cb	44–265°
555.6m	So	36–300°
556.5m	So	50 → 275°
557.0m	So	62 → 256°
556.9m	1mm Cb	53 → 83°
drillog 557.2m	So	70° → 256°
557.6m	3m	71 → 265°
557.6m	9½/fold.	73 → 105°
557.6m	So	62° → 262°
558.3m	So	73 → 266°
559.1m	So	63 → 286°
561m	9½fold	53 → 302°
561m	So	59° → 292°

AMIN also So // →

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type	Diamond	Tenement_No	
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	1st October 1999

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0.1 1 mm 2 4 10)	Comments	Alteration	Mineralisation
560									
		559					559.9 – 583.2m pyrrhotite / pyrite grey-black shales with minor ashy volcanics,		
		561	561B			a	561.8–562.0m pyrrhotite vein 562.0–562.6m silty qtz vein with disseminated galena and sphalerite 562.6–567.8m stockwork of quartz, carbonate – sphalerite veins	Flt / clay 077	gn/sph / sph
		562	563A						
565		563							
							566.7 – 570.2m ashy volcanic		
570									
575									
								So / 047 055 / So So / 034	
580									

564.4 – 566.9m oriented core

564.5m	1mm calcite	45° → 014°
564.7m	S_1?	77° → 254°
564.8m	1mm calcite	49° → 101°
564.9m	1mm calcite	34 → 035°
566m	3mm calthonate/qtz.	53 → 338°

578.4 – 578.9m oriented core,

578.6	So	037 → 090°,
578.7	So	032 → 044°

drillog

645227

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type	DIAMOND	Tenement_No	
Year	1999.	Prospect	BEATRICE
Geologist	KRD	Date	1st October 1999

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
580						01 1 mm 2 4 16			
		564							
			582						582.5 diss Sph. 583.2
		565	583.2				583.2 – 589.0m green-grey silicified massive ashy volcanic.		
		566					584.7 – 584.8m CA // 3mm galena vein and 2-3mm sphalerite spots.		
585			584.8						
		567						Si	
			587						
		568							
							589.0 – 596.4m Well bedded black (589–593.2) and grey (593.2 – 596.4m) shale, the black shale section is strongly pyritic/pyrrhotitic, abundant pyrrhotite developed at contact. Only minor sphalerite		
590		569							
		570						So/048	Py/Po
		571							
		572							593.7 Sph 595.8
595		573						So/018	
		574						Sporadic Cb/Py	Po
							596.4 – 624.7m. Green grey siliceous ashy volcanic.		
		575						So/037	Po
							3mm Sph 5mm	So/037	5mm Sph veinlet.
600		576							

645228

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type	DIAMOND	Tenement_No	
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	01/10/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0.1 1 mm L 4 16)	Comments	Alteration	Mineralisation
600									
605							607.1 -	010/50	
		577					607.1 - 607.4 — stockwork of carbonate / sphalerite		ob/spk
610									
615								50/037	
620								50/030	

645229

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type	DIAMOND	Tenement_No	
Year	1999	Prospect	BEATRICE
Geologist	KDD	Date	1st October 1999

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
620						0.1 1 mm 2 4			
		578 (620.7)					- 620.7 – 622.5m stockwork of predominantly brown sphalerite with subordinate calcite - dark sphalerite and galena ~ 7-10% sphalerite.		620.7m sph 622.5
		579 (621.5)							
		581							
		622.5						So/27	
		582							
625		583					624.7 – 635.0m.		
		584					Interbedded fine ashy volcanic and mottled felsic volcanic. Disseminated sphalerite from 624.7 – 628.3m,	patchy K.	sph.
		585							
		586					Patchy K-feldspar alteration		
		587					Intermixed ashy volcanic/ CVC.		
630									
		588							
		589							
		590							
635									
		591					635.0 – 556.4m. Pink + green mottled illite and K-feldspar altered feldspar phyric volcanic = CVC	Ch	
		592						K.	
640									

645230

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	MS10	Project	
Hole_Type	DIAMOND	Tenement_No	
Year	1999	Prospect	BEATRICE
Geologist	KPD	Date	1st October 1999

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (0 1 mm 2 4)	Comments	Alteration	Mineralisation
640									
								K/	
645								CL	
650									
655									
							656.4m (EOH)		

645231

APPENDIX 2

BEATRICE PROSPECT

Rock Chip Assay Results,

Pontifex & Associates Pty. Ltd. 645233

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MINERALOGICAL REPORT No. 7666

by Ian R. Pontifex MSc.

August 13th, 1998

TO :	Dr Barry Murphy Regional Exploration Manager Pasminco Exploration GPO Box 1291K MELBOURNE VIC 3001
YOUR REFERENCE :	Order No. 2504
MATERIAL :	Mineralised rock sample, Mt Read Volcanic Belt, Tasmania
IDENTIFICATION :	B1
WORK REQUESTED :	Polished thin section preparation, petrographic/mineragraphic description and report.
SAMPLES & SECTIONS :	Returned to you with this report.
DIGITAL COPY :	Enclosed with hard copy of this report.

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B1 **Crudely layered vitric-lapilli-tuff, with (deuteric) silica-chloritic-alteration, and minor k-spar. Incorporates 'syngenetic' irregular fine interfragmental networks of sphalerite >> galena, trace marcasitic-pyrite. Rare gold.**

This thin section (and handspecimen) viewed macroscopically is seen to consist of a crudely layered, unsorted fragmental aggregate of greyish and greenish grains/fragments, <1mm to 10mm maximum dimension, with a minor, irregular, but widespread and intergranular fine network of reddish brown sphalerite.

Petrographically, the host rock is seen to consist of various (textural) manifestations of mostly extremely fine granular quartz (25-30%), chlorite (35-40%), and k-spar (10%). [The k-spar is highlighted stained yellow on the section offcut by sodium cobaltinitrite solution.] There are also minor shredded streaky foliae of sericite (7-10%). Ore minerals are sphalerite (approx. 10%), galena (?2%), pyrite <1%.

Most chlorite is extremely fine, gradational to indefinite chloritic-clay, or palagonite, forming patches and crudely aligned lenses to 5mm, with somewhat shredded margins and incorporating minor extremely fine grains of quartz. This material appears to represent altered volcanic glass. Quartz occurs as clusters of extremely fine grains, with a matrix of the chloritic material described above, also forming irregular fragmental patches to several mm across, and as disseminations. Much of this material also appears to be altered (?devitrified) volcanic glass fragments. A small proportion of the quartz, as relatively more concentrated micromosaic, forms apparent individual (volcanic) fragments 1 to 2mm size.

Extremely fine k-spar also forms small, irregular scattered and somewhat shredded fragments, but on small clast 1 to 10mm, of diffuse k-spar micromosaic (see stained offcut), has dispersed sericite and is largely enveloped in shredded foliae of sericite. This sericitic envelope extends to a lens of finer (felsic) tuffaceous fragmental, completely sericitised. Sinuous shredded fine foliae of sericite occur locally through the aggregate.

Dark reddish-brown (translucent) sphalerite occurs as individual grains <0.2mm, more extensively as ragged irregular lenses and stringers forming a discontinuous network between the patchy-fragmental volcanic components described. Minor very fine sphalerite is

incorporated within some fragments. Galena rarely forms individual grains to 0.5mm, but mostly galena occurs as irregular short stringers and irregular grains intricately within sphalerite, also mostly <0.5mm in size. Trace very small (<0.1mm) grains of "marcasite-pyrite" are loosely associated with sphalerite. A single grain of gold, about 20 micron size, occurs on the margin of sphalerite, in a composite sphalerite-galena vein which tends to cut across the gross weak layering in this rock, and this may represent mobilisation of the inherent sulphide.

Interpretation

This sample is identified as a glassy pyroclastic (flow) rock, "vitric-lapilli-tuff", in which the silica, chlorite and possibly the k-spar are basically indigenous, deuteric alteration products of largely original glassy volcanic material. The incorporated sphalerite and lesser galena are also regarded as indigenous (syngenetic). The gross fabric and minor sericitic foliae, and minor apparent recrystallisation/mobilisation of sphalerite and galena into more or less crosscutting veins, are probably due to superimposed low grade metamorphism. [It may be interesting to speculate why the only gold grain occurs in this sulphide vein.]

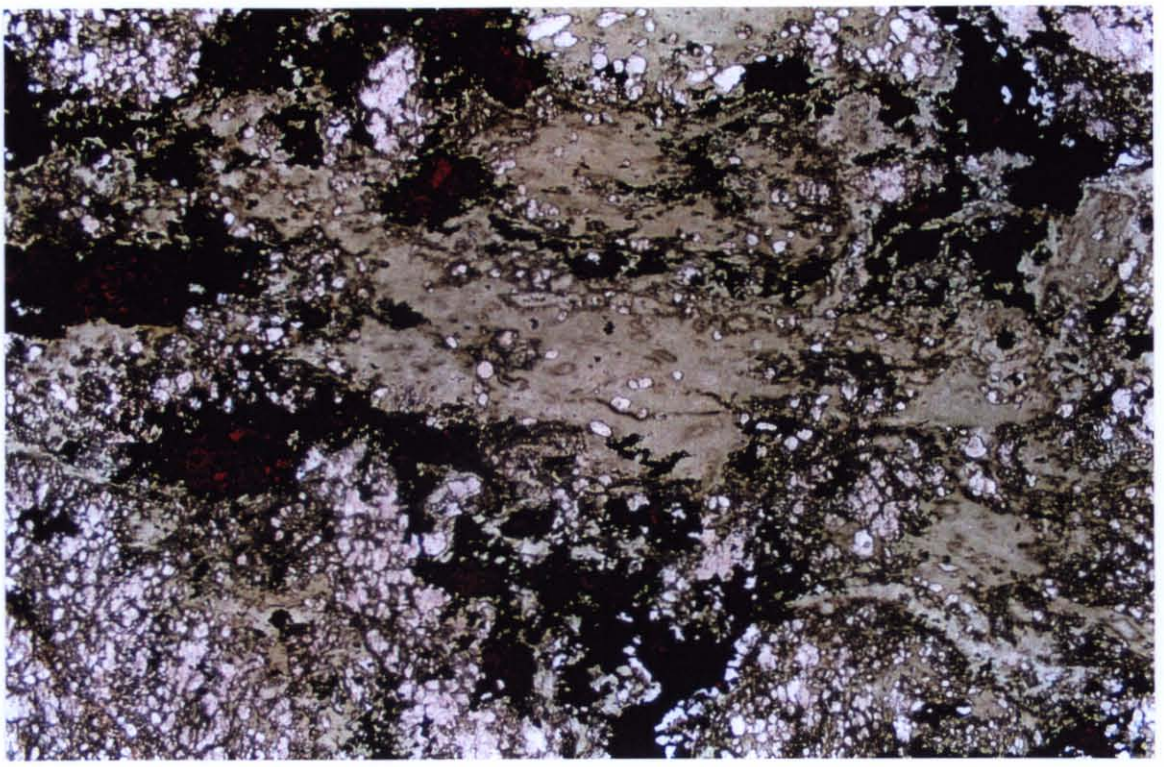

Fig 1 **B1** 0.45 mm

TS. Ordinary light (OL). Shredded lenses of extremely fine chlorite (to palagonite), probably altered glassy fiamme, within a matrix of extremely fine quartz with indefinite clays, also interpreted as altered glass, all constituting an apparent vitric-lapilli-tuff. Dark reddish-brown sphalerite as an integral part of the gross matrix.

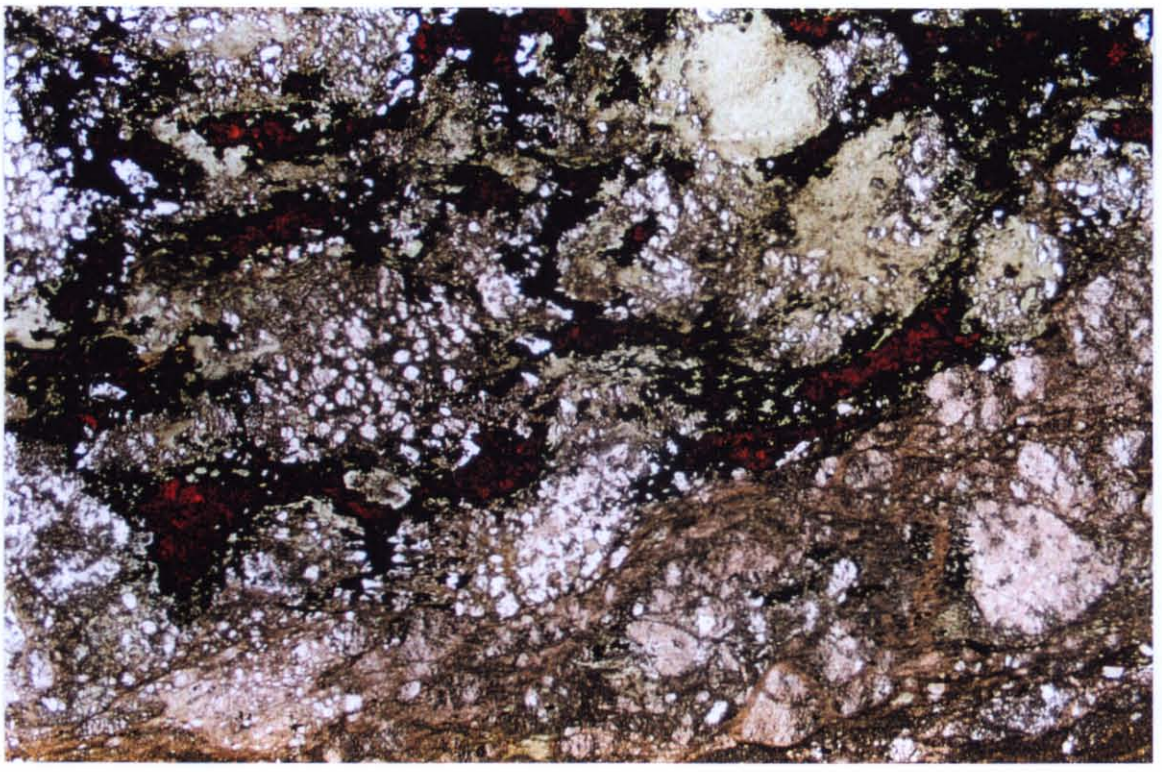

Fig 2 **B1** 0.45 mm

TS. OL. Example of heterogeneous aggregate of chloritic and quartzose ash, lapilli fragmental material. Matrix with shredded foliae and lenses of indefinite alteration products, but incorporating reddish-brown sphalerite with the same integral fabric.

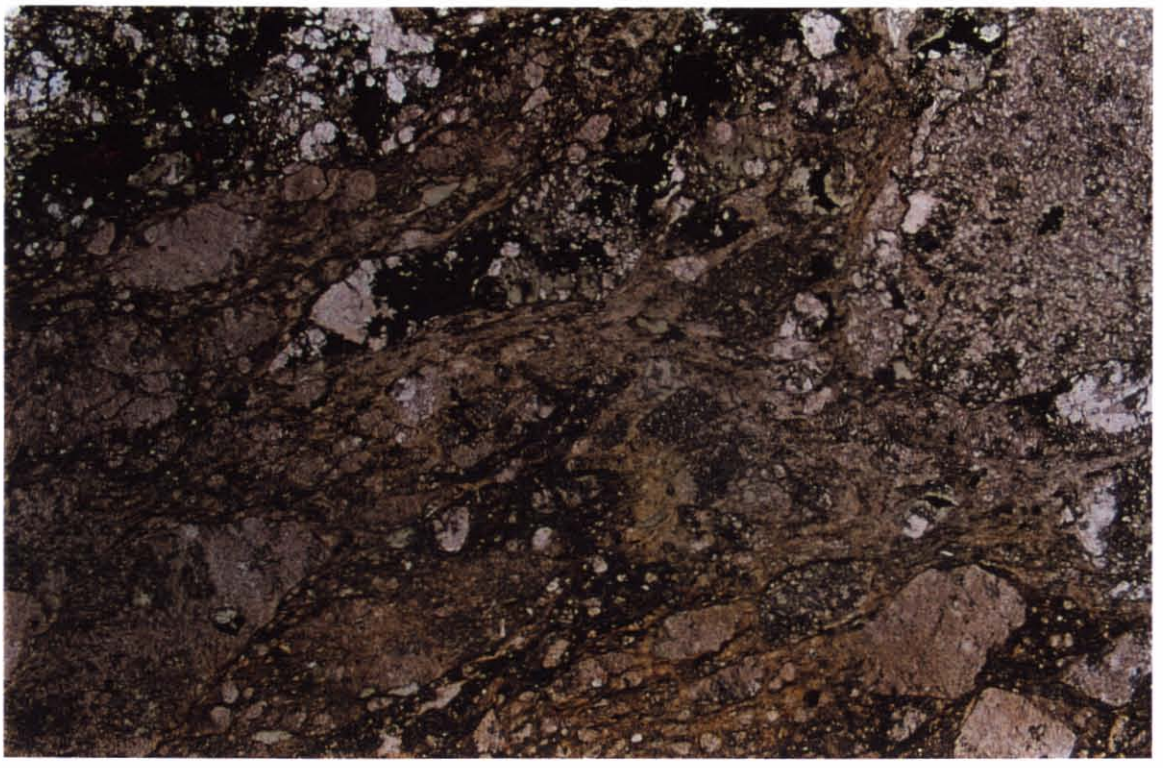

Fig 3 B1 0.45 mm

TS. OL. Local area of crudely layered tuff within a weakly schistose matrix of shredded foliae, incorporating small irregular grains of dark red brown sphalerite (NW quadrant). Larger fragment in NE corner is diffuse, cryptocrystalline k-spar.

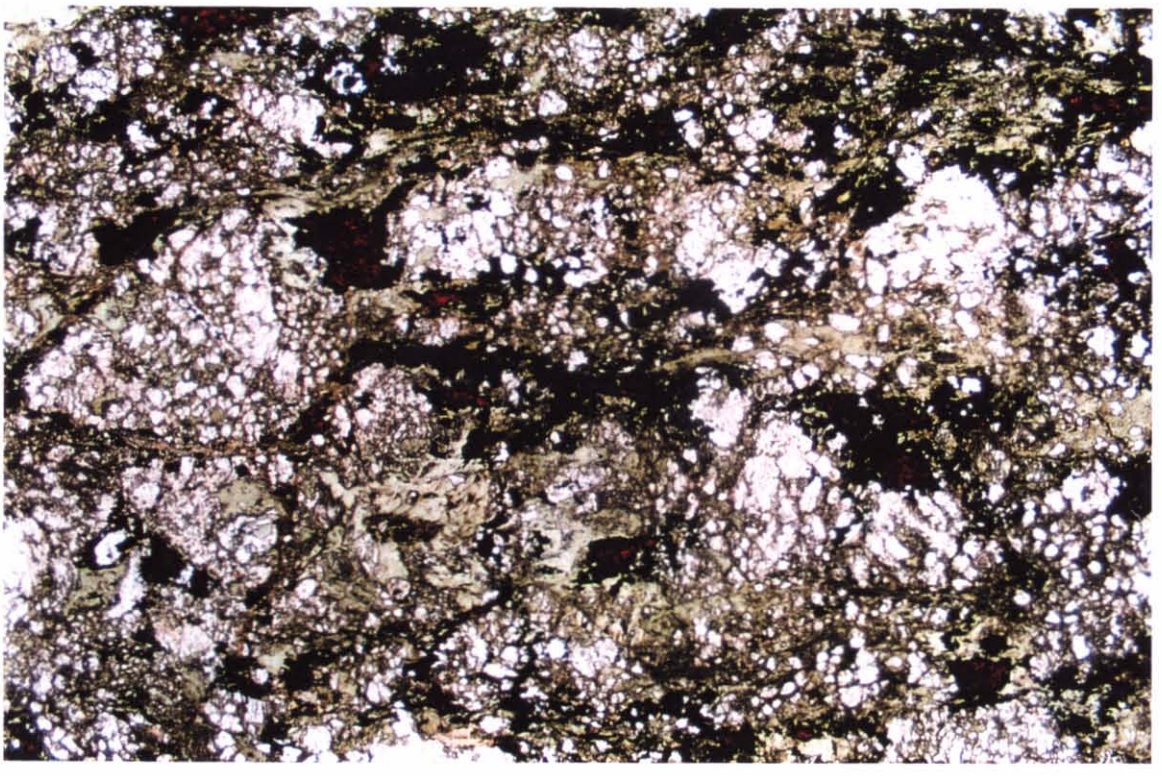

Fig 4 B1 0.45 mm

TS. OL. Further example of tuffaceous host rock, with intricately mixed chloritic material (greenish) and quartzose domains (clear), incorporating scattered dark sphalerite.

Fig 5 B1 0.18 mm

Reflected light photo, (higher magnification than Figs 1 to 4), to show detail of irregular sphalerite (mid grey), herewith, one of the relatively localised, intricately intergrown grains of galena (white).

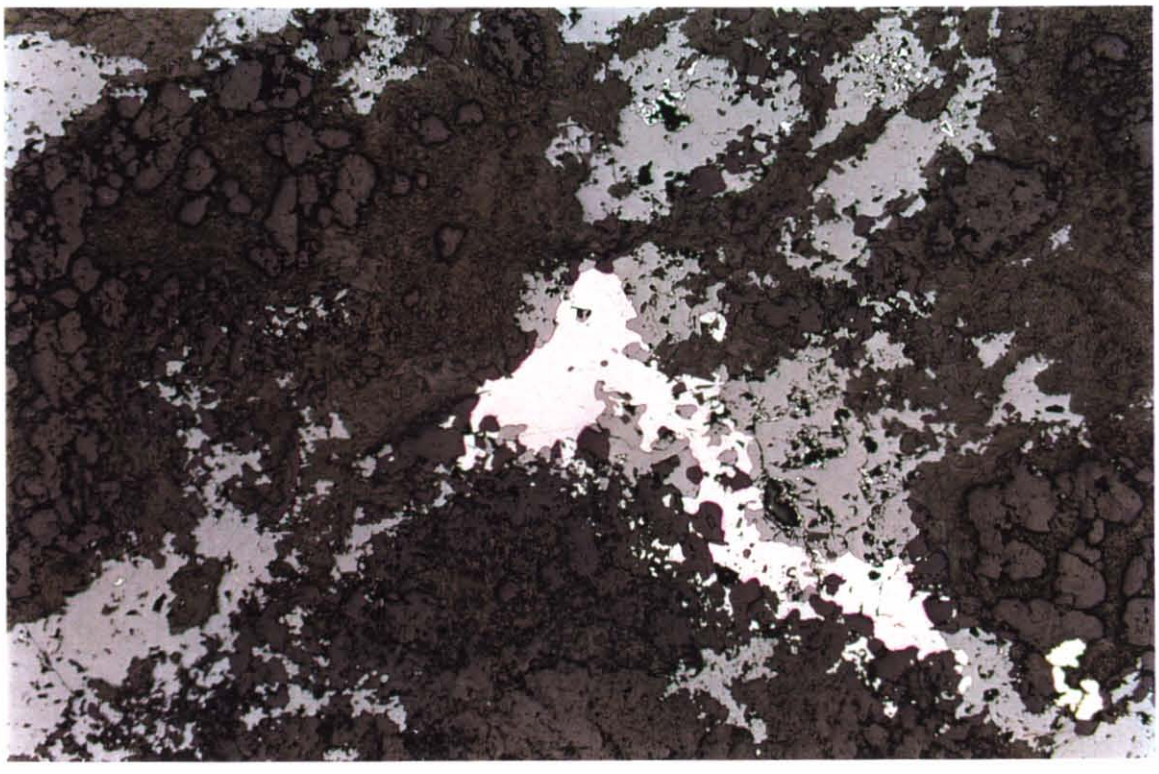

Fig 6 B1 0.45 mm

Reflected light, further example of intergrown sphalerite and galena, heterogeneously scattered through tuffaceous volcanic host rock.

645239

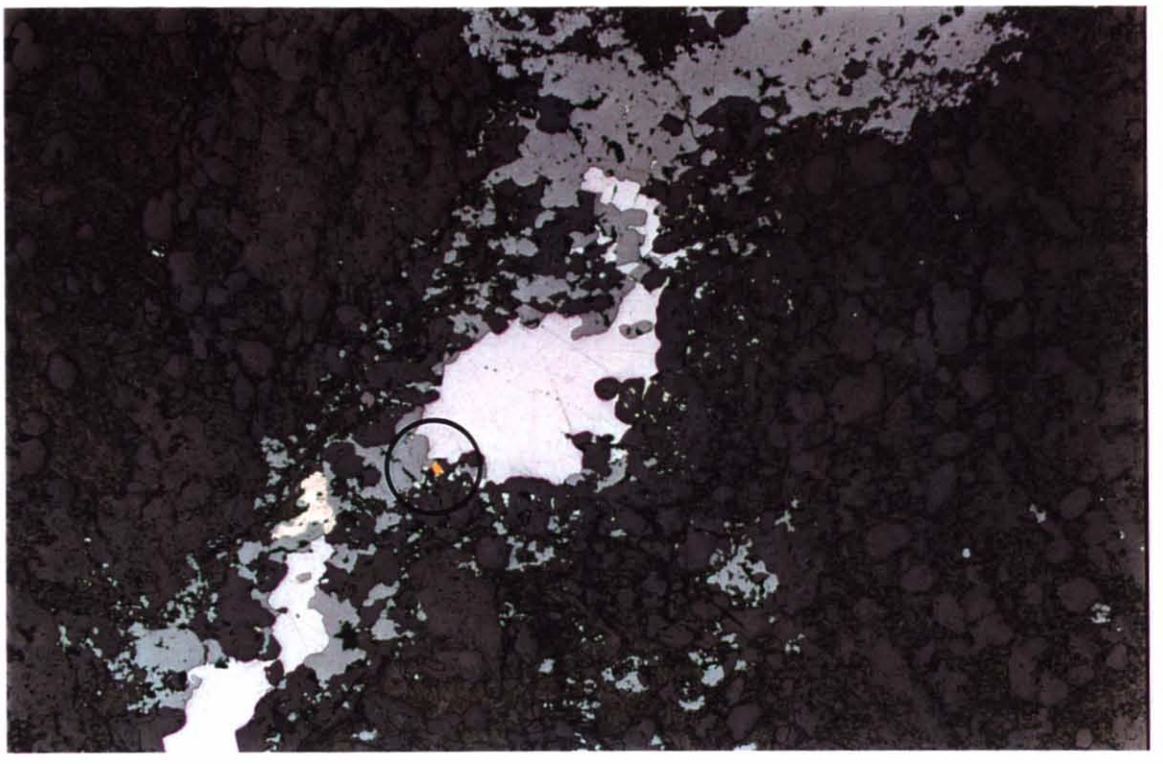

Fig 7 **B1** 0.18 mm

Reflected light, more or less crosscutting vein of sphalerite > galena, with a single, 20 micron grain of gold on the margin of sphalerite.

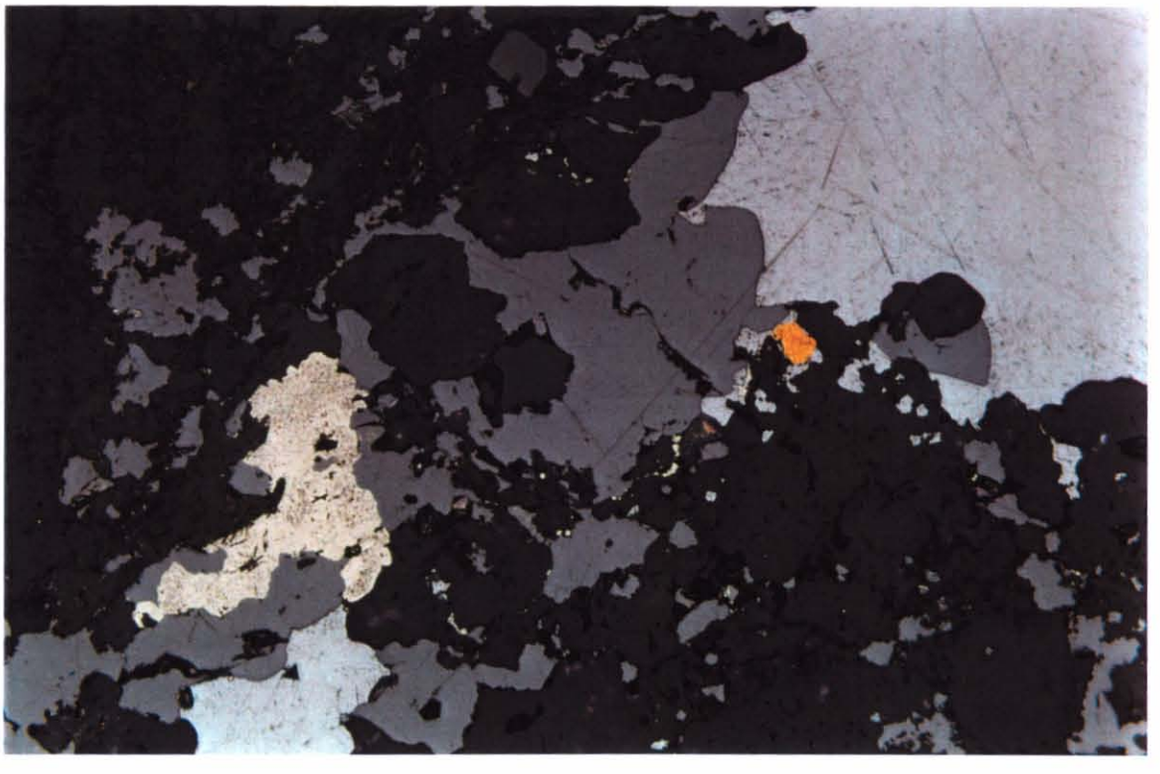

Fig 8 **B1** 0.04 mm

Reflected light. Higher magnification of Fig 7, showing detail of gold grain.

Pontifex & Associates Pty. Ltd.

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645240

MINERALOGICAL REPORT No. 7703

by Ian R. Pontifex MSc.

October 14, 1998

TO : Mr Kim Denver
Pasminco Exploration
PO Box 886
BURNIE TAS 7320

YOUR REFERENCE : Order No. 1522

MATERIAL : Mineralised rock samples, Mt Read Volcanic Belt, Tasmania

IDENTIFICATION : 274753 to 274761 (x8)

WORK REQUESTED : Polished thin section preparation, petrographic/mineragraphic description and report, including photomicrographs.

SAMPLES & SECTIONS : Returned to you with this report.

PONTIFEX & ASSOCIATES PTY. LTD.

SUMMARY COMMENTS

Eight mineralised rock samples are described in this report from polished thin section, with selected photomicrographs. The lithologies represented all have a volcanic component. Almost all (except 274761 which is different from all others), contain sparse fine to coarser, and locally abundant sphalerite (which is yellow-brown transluscent with apparent relatively low iron content). Galena, pyrite and chalcopyrite occur in several samples, generally less abundant than the sphalerite.

The most intensely mineralised sample is 274758 with semi-massive base metal sulphides within a fairly coarse, pyroclastic flow rock, with extensive chlorite clay-sericite siliceous and carbonate alteration, notably of ex-glassy (pumice) material. [This sample is most like the previous sample B1 described for Barry Murphy, August 1998.]

The bulk rock mineralogy in most samples is compact extremely fine silica, clay-sericite, or sericite-alone, lesser chlorite, commonly with ultrafine dispersed k-spar which is highlighted stained yellow on the offcuts stained with sodium cobalti nitrite. In some samples, it is difficult to positively distinguish this material as mudstone facies, from possible completely altered volcanic groundmass material. Broader macrostructures however are helpful in the regard, variously identifying several samples as lapilli tuffs, and as volcaniclastics (possibly reworked tuffs).

Also, there is a rather distinctive but poorly defined "aggregate-texture" in 274753 and 274757, which may be a pelletal or intrabrecciated mudstone, or a mudstone disrupted by pressure solution process (including the development of stylolites), or possibly lapilli tuff of altered volcanic groundmass material. Regardless, there are definite scattered volcanic fragments including (?derived) microphenocrysts in these two rocks, (similar to volcaniclastic material) and these fragments are altered to composite fine quartz, chlorite, sericite and to adularia ± sphalerite.

INDIVIDUAL DESCRIPTIONS

274753

Bulk rock of clay-chloritic/sericitic composition, possibly (silty) mudstone with vague intrabrecciation structures, or possible lapilli tuff of altered acid lava groundmass material. Numerous scattered discrete volcanic components as quartz-chlorite-(adularia) altered ash fragments, rarer quartz microphenocrysts. Minor sphalerite scattered, slightly coarser sphalerite, plus sparse galena, pyrite, occurs in some altered fragments. Compares with 274757.

Approximately 70% of this rock consists of compact, extremely fine, mixed clay-sericite with minor chlorite and disseminated quartz silt to fine sand size grains. This material incorporates a vague aggregate of subrounded small breccia-clast-like domains, 1mm to 10mm across, some defined by stylolites. Ultrafine k-spar occurs in some areas as indicated, stained yellow on the offcut treated with sodium cobalti-nitrite. Objectively, and alone, most of this material is somewhat non-descript, and could be interpreted as massive mudstone with the micronetwork defining intraformational brecciation or description due to pressure solution. Alternatively, it may represent an aggregate of altered acid-glassy lapilli. Notwithstanding, there are numerous discrete scattered volcanic components forming the other 30% of the rock, manifest as :

*	Rounded quartz microphenocrysts, 0.1mm to 0.7mm	5-7%
*	Irregular fragments <1mm to 3mm of composite, intricately mixed, alteration phases of fine chlorite, quartz, adularia ± clay sericite, with relict aphyric micro-texture, indicative of intermediate (to possibly basic) lava. Some fragments are elongate and apparently fractured fiamme	15-20%
*	Accessory single felspar laths and possible shards	2-3%

Sulphides are also scattered as irregular grains as fine as 0.05 mm to fine granular irregular, patchy lenses 0.5 x 2.5 mm, individually in the general clay-sericite mass, also specifically located within some of the quartz-chlorite altered volcanic fragments. Sphalerite is most abundant (overall about 3% of the whole rock), as transluscent yellow-brown grains. Rare galena to 2mm occurs mostly concentrated within one fragments of lava, and trace pyrite accompanies galena and sphalerite in a diffuse patch of fine quartz + chlorite.

645243

Fig 1 274753 0.45 mm

TS. Ordinary light (OL). Domains of compact extremely fine quartz-clay sericite which may be interpreted as lenses of silty mudstone, or a possible lapilli of altered volcanic groundmass material. Incorporates definite volcanic components, as single clear quartz phenocryst, and fragments of quartz-chlorite-adularia-altered volcanic. Small very dark brown spots in matrix and in altered fragments are sphalerite.

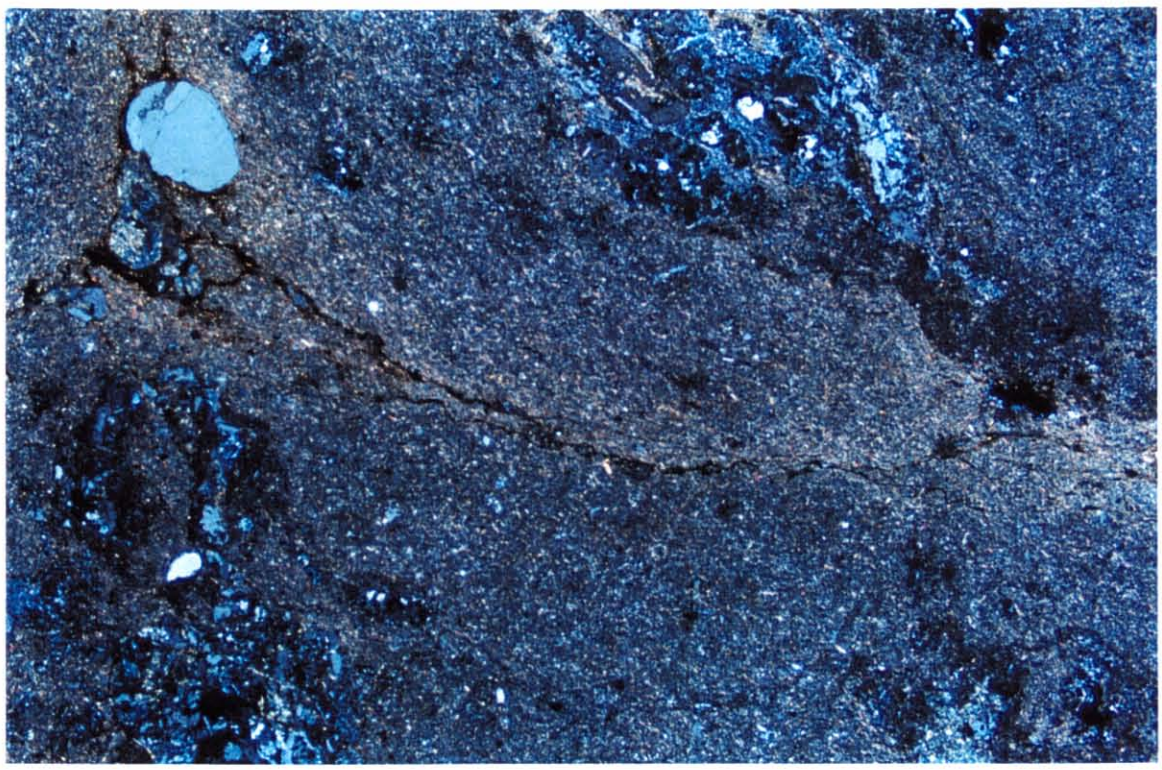

Fig 2 274753 0.45 mm

TS. Xnic equivalent of Fig. 1

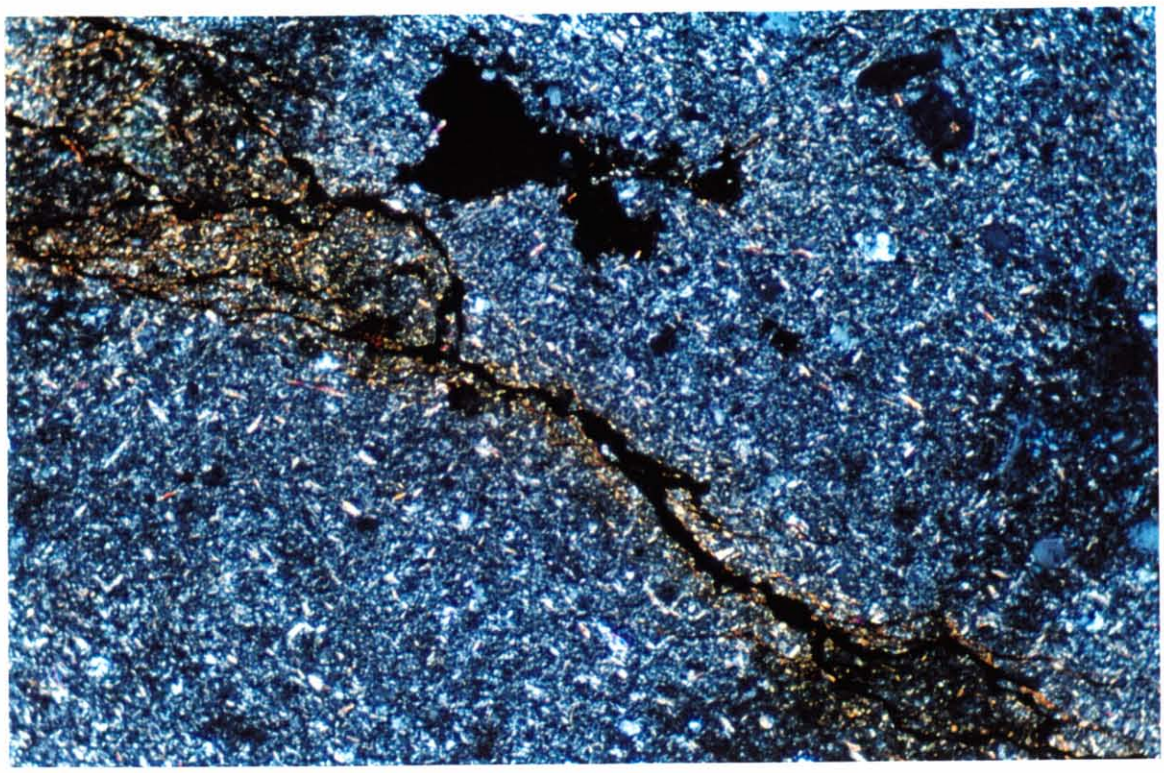

Fig 3 **274753** 0.18 mm

TS. Xnic. Higher magnification of Fig 2, showing detail of massive extremely fine clay-sericite. Black grain is (isotropic) sphalerite. Iron stained microstylolite separates two domains.

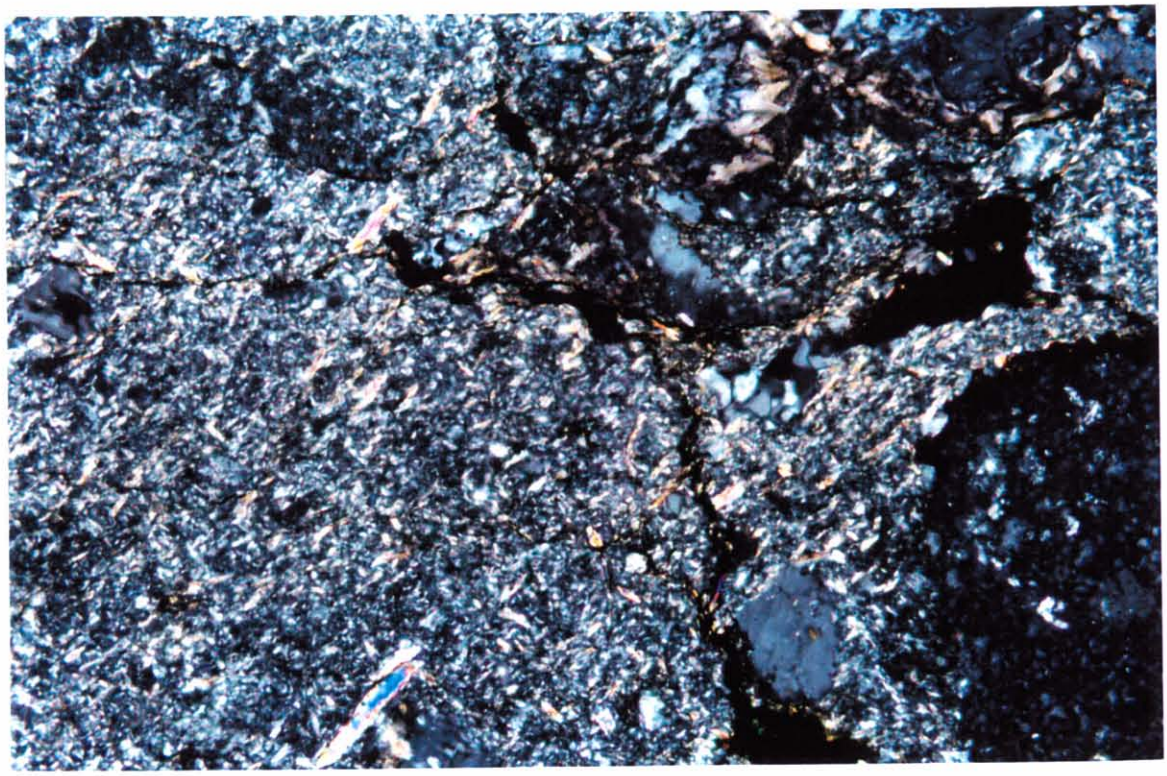

Fig 4 **274753** 0.04 mm

TS. Even higher magnification of Fig 3.

274754

Intermediate to acid pyroclastic-flow rock. Numerous large flow-oriented and clay-sericite-altered, glassy clasts (?pumice) within a sericite-carbonate-quartz microcrystalline matrix. Minor irregular grains and lenses of sphalerite, rarer pyrite, trace chalcopyrite, intricately within the matrix, rarely in veinlets.

Clay-sericite-altered fiamme-like clasts of glass (?pumice) from <1mm in size to 3mm wide x 10mm long are similarly (flow)-aligned, but otherwise irregularly distributed to form about 40% of this rock. These occur within a matrix of microcrystalline quartz mosaic incorporating subordinate patchy/intergranular carbonate, also diffuse patchy sericite, forming about 50% of the sample and apparently representing late stage replacement of a former primary groundmass to the fiamme. Minor subrounded and corroded quartz phenocrysts (5%), <1mm in size, are scattered.

Sphalerite (yellowish-brown translucent) is scattered throughout to form about 7-10% of the whole rock, as very small grains (<0.05mm) to irregular small lenses 0.5mm x 2.5mm, intricately incorporated within the fine quartz-carbonate matrix, rarely in crosscutting short stringers. Trace fine galena > chalcopyrite rarely accompanies this sphalerite.

Pyrite crystals commonly about 0.1mm are locally clustered to form small patches elongate parallel to the prevailing flow direction, and as for the sphalerite, is an integral part of the whole rock, particularly of the alteration groundmass/matrix. Minute inclusions of galena are common in the pyrite crystals.

645246

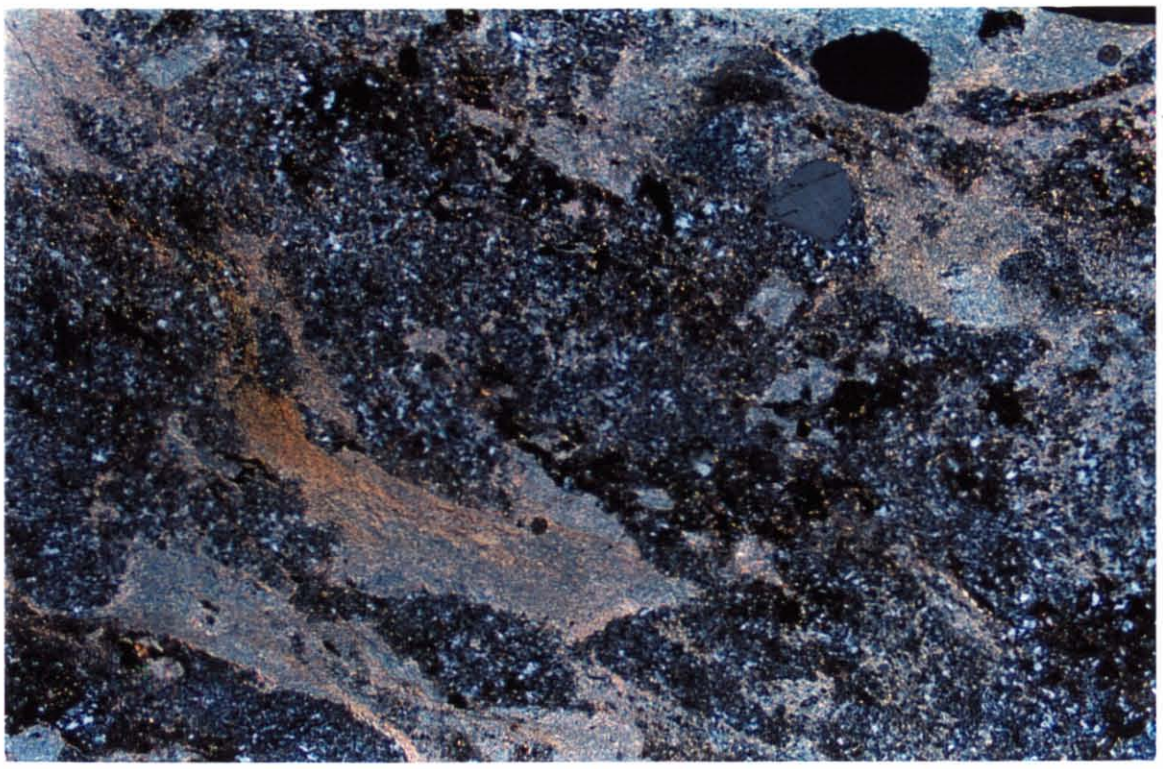

Fig 5 274754 0.45 mm

TS. Xnic. Sericitised elongate clasts of glass (?pumice) and rounded quartz microphenocrysts in silicified/sericitised volcanic groundmass.

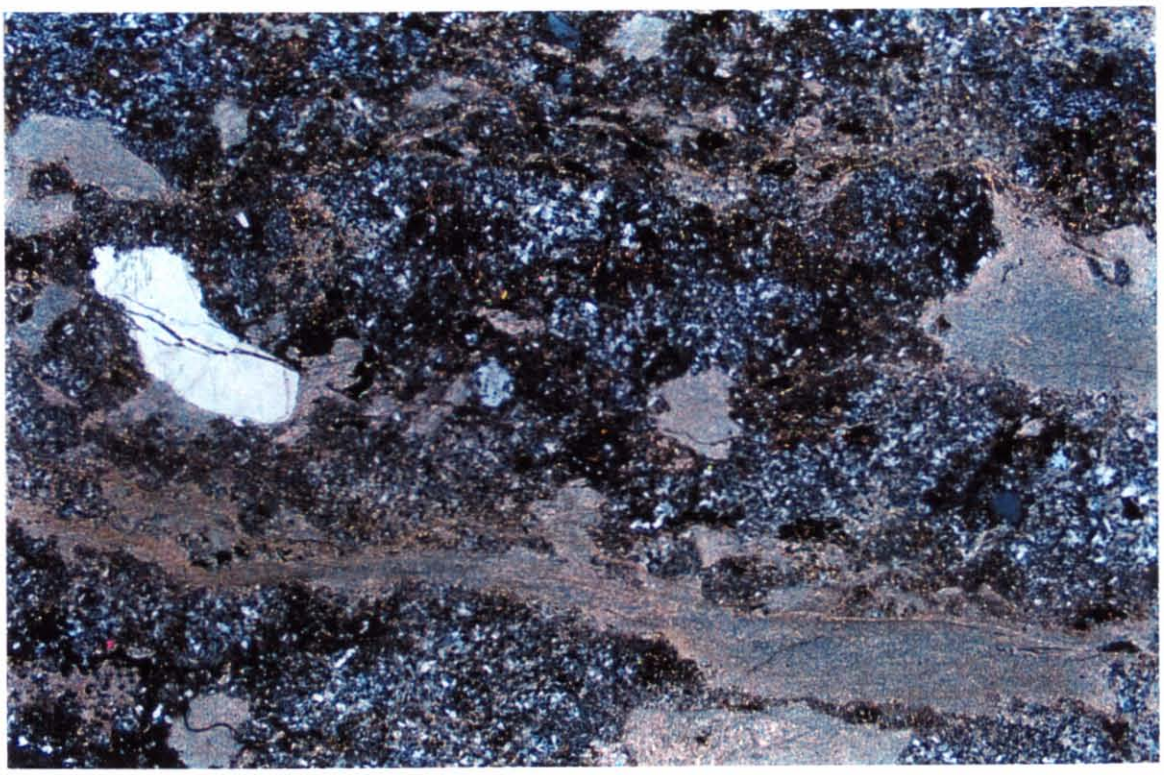

Fig 6 274754 0.45 mm

TS. Xnic. As for Fig 5; small dark patches of carbonate alteration in silicified groundmass.

274755

Irregularly vaguely lenticular-layered silty mudstone, minor scattered sulphide and altered volcanic debris (as in 274753). In contact with an alteration band of ultrafine k-spar ± quartz > chloritic clay, also with scattered (minor) sphalerite > pyrite> galena, trace chalcopyrite and minor volcanic components.

This thin section viewed macroscopically has irregular lenticular-layered areas of extremely fine compact material, variable in colour from dark-grey-green, to mid-grey to pale. Petrographically, the darker domains are seen to consist of variable concentrations of ultrafine chlorite-clay-sericite mudstone/silty mudstone (with detrital extremely fine muscovite), with minor fine scattered volcanic material. This mudstone has accessory small scattered grains of sphalerite ± trace galena (also as in 274753), but numerous stringers of quartz carrying pyrite, chalcopyrite, sphalerite > galena.

This darker domain of mudstone has a variably sharp to diffuse contact with the above, locally with coinciding microstylolites, also with a mid grey 'layer' seen petrographically, (together with the offcut stained yellow by sodium cobalti-nitrite) to consist of massive ultrafine k-spar. This appears to have intricately mixed equally fine quartz, also there are minor scattered micropatches of pale chloritic clay, rare quartz microphenocrysts and scattered, irregular grains of sphalerite > pyrite > galena.

This layer is internally vaguely microbanded parallel to the contact, it is overall about 30mm wide, occupying most of the thin section, and appears to represent a band of extremely fine k-spar ± quartz alteration, presumably developed within an original fine volcaniclastic sediment. Small lithic fragments of altered volcanic material and rare 'phenocrysts' (as in 274753) ± sphalerite are locally loosely clustered.

A vague narrow central core to this band, seen on the offcut to be relatively pale, also with more intense yellow-staining (k-spar-rich) has a small associated patch of composite sphalerite > pyrite > galena.

Total sphalerite content in this rock is about 3%, with pyrite, galena, chalcopyrite each <1%.

645248

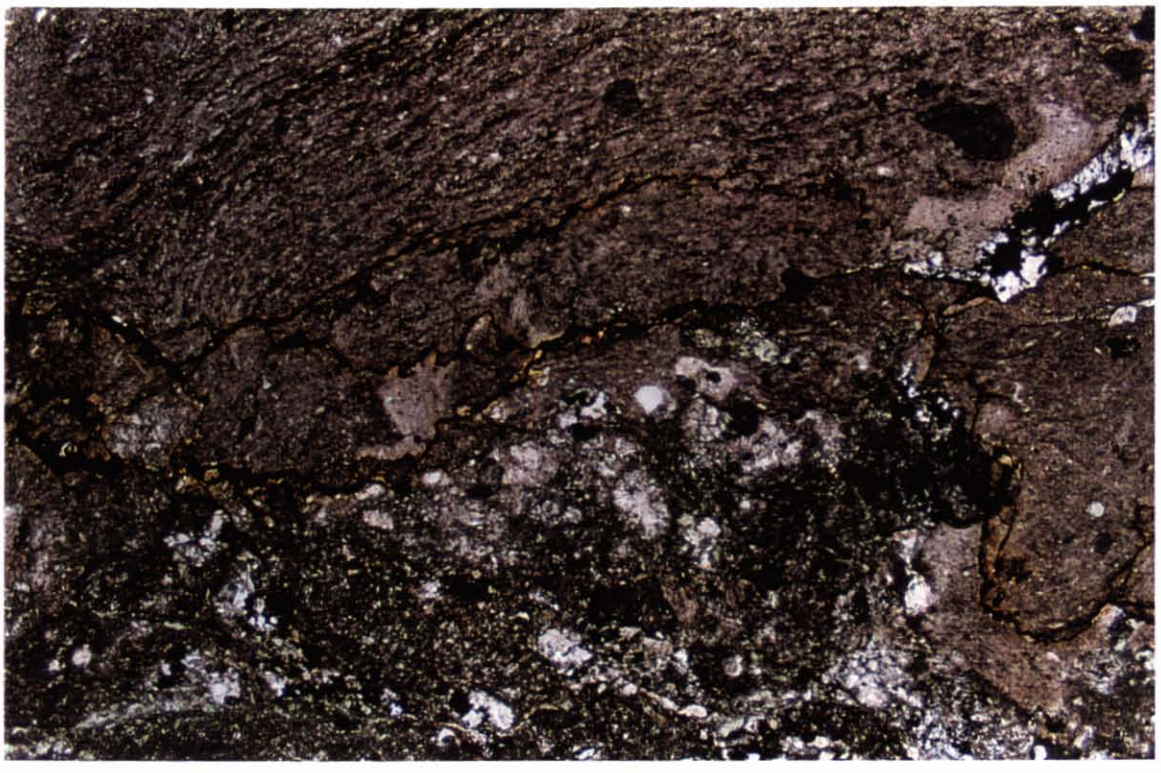

Fig 7 274755 0.45 mm

TS. OL. Contact between apparent mudstone (top) and fine grained volcaniclastic (bottom). Fe-stained microstylolites partly coincide with this contact, dark small discrete grains, loosely clustered are sphalerite, in top right corner sphalerite in a quartz veinlet.

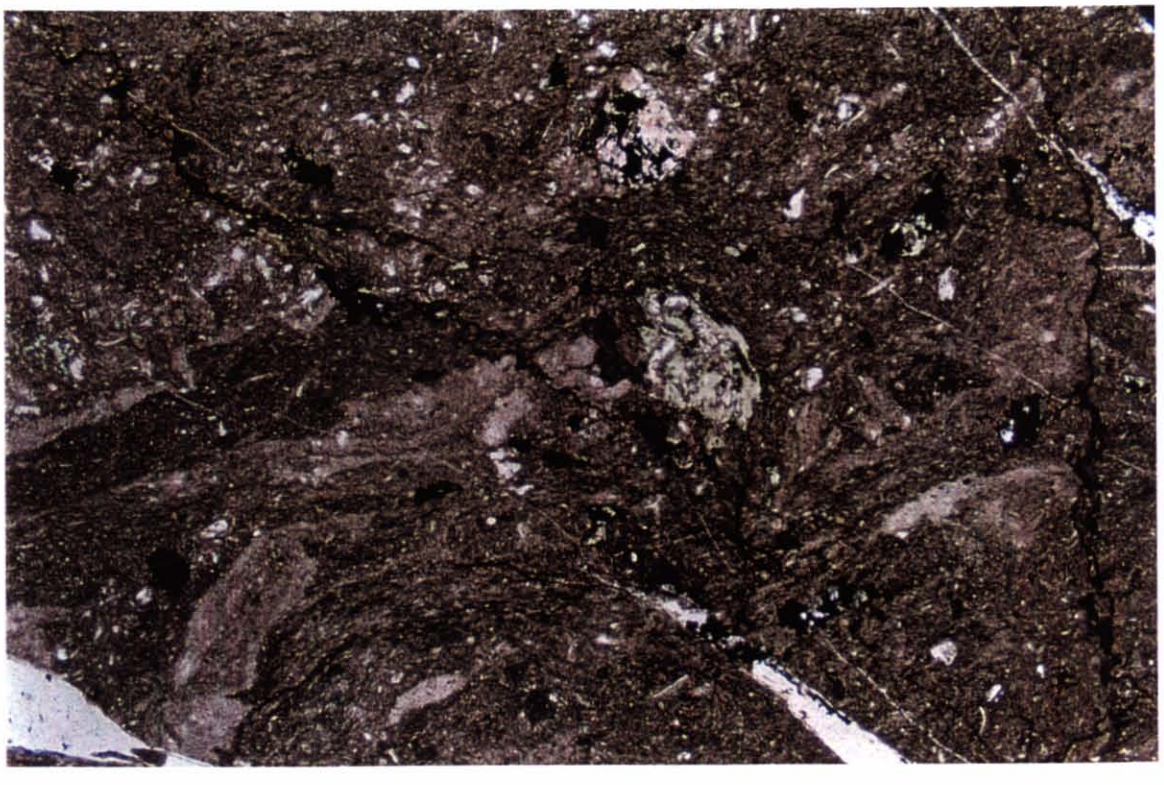

Fig 8 274755 0.45 mm

TS. OL. Mudstone incorporating scattered small altered volcanic fragments. Small black grains of sphalerite disseminated in mudstone, also associated with altered fragments, and in stringers.

274756

Lenticular-layered mudstone including lenses with ultrafine k-spar, and layers with greater and lesser acid volcanic derived detritus (volcaniclastic), selectively replaced by adularia. Minor scattered fine sphalerite > galena, lesser sphalerite in stringers, + quartz.

Macroscopically, this thin section is seen to consist essentially of two major (sedimentary) layers (beds) about 15mm thick, and a very small part of a third layer. Petrographically, an (arbitrary) bottom bed is seen as a fairly homogeneous (chlorite)-clay-sericitic mudstone facies, with minor dispersed silt to fine sand size grains of quartz, several volcanic-derived lithic grains, also sparse fine scattered sphalerite (mostly within a small irregular lens of very fine chlorite).

The (arbitrary) overlying bed is seen on the stained offcut to have ubiquitous ultrafine k-spar (stained yellow), and in thin section, it is seen to consist of several lenses, all with a basically mudstone matrix as in the bed 'below' but with various concentrations and size of scattered, lithic detritus of acid volcanic derivation up to 50mm size (as may be expected in a volcaniclastic sediment). Much of this detritus is selectively and distinctly altered to/replaced by adularia. Accessory small grains of sphalerite from <0.02mm to 0.5mm are scattered, and the rock is cut by several threads and stringers of quartz, some dominated by sphalerite. Several grains of galena to 0.5mm occur in irregular small patches of vein quartz.

645250

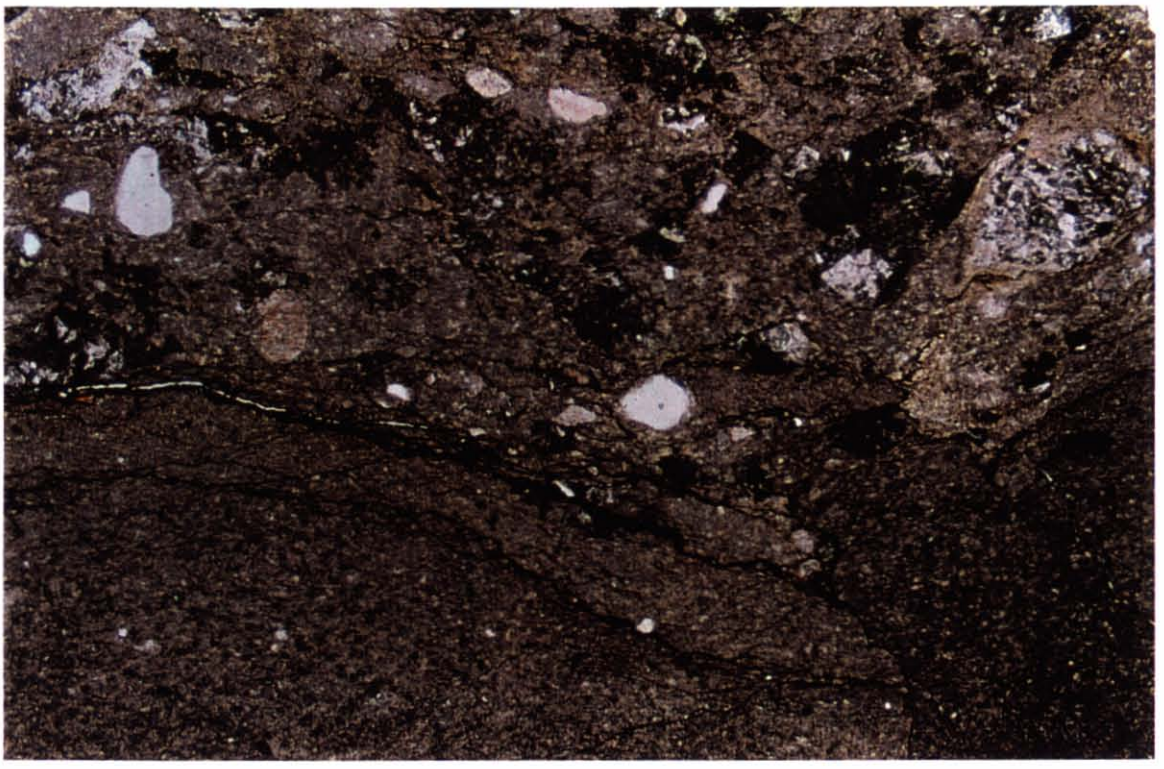

Fig 9 274756 0.45 mm

TS. OL. Contact between a pillow-shaped lens of mudstone (bottom), and volcaniclastic facies (top).

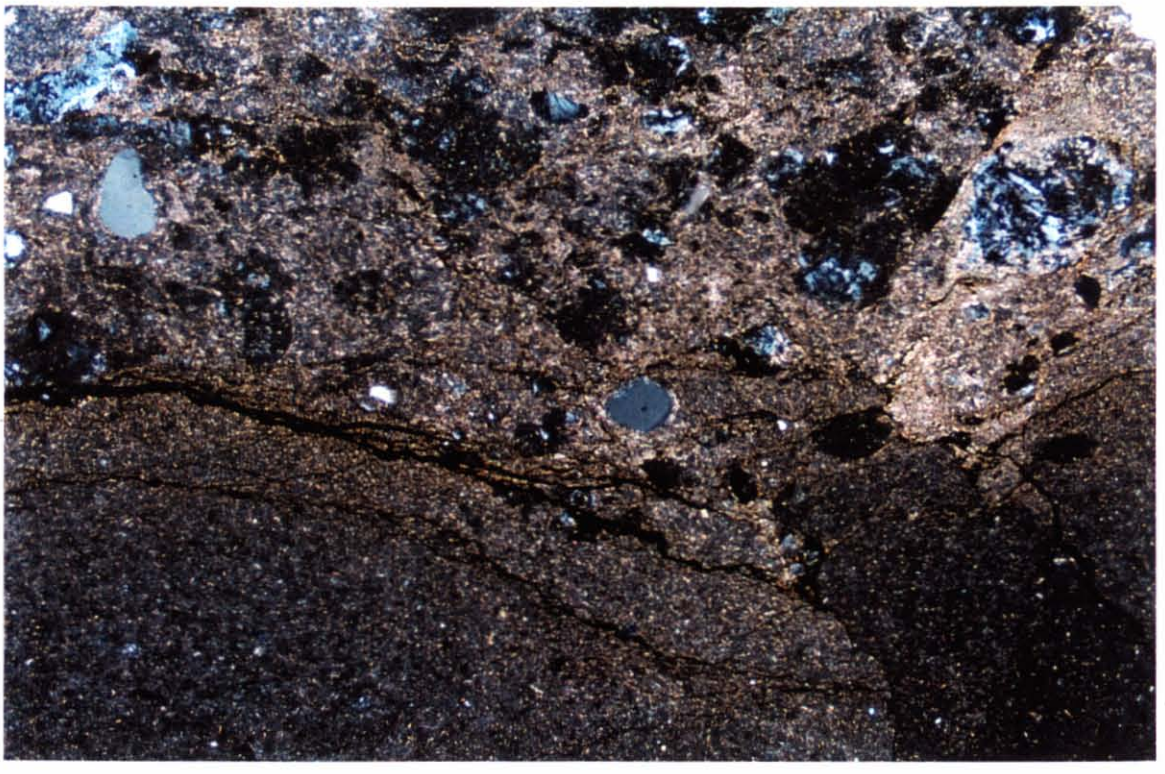

Fig 10 274756 0.45 mm

TS. Xnic equivalent of Fig 9.

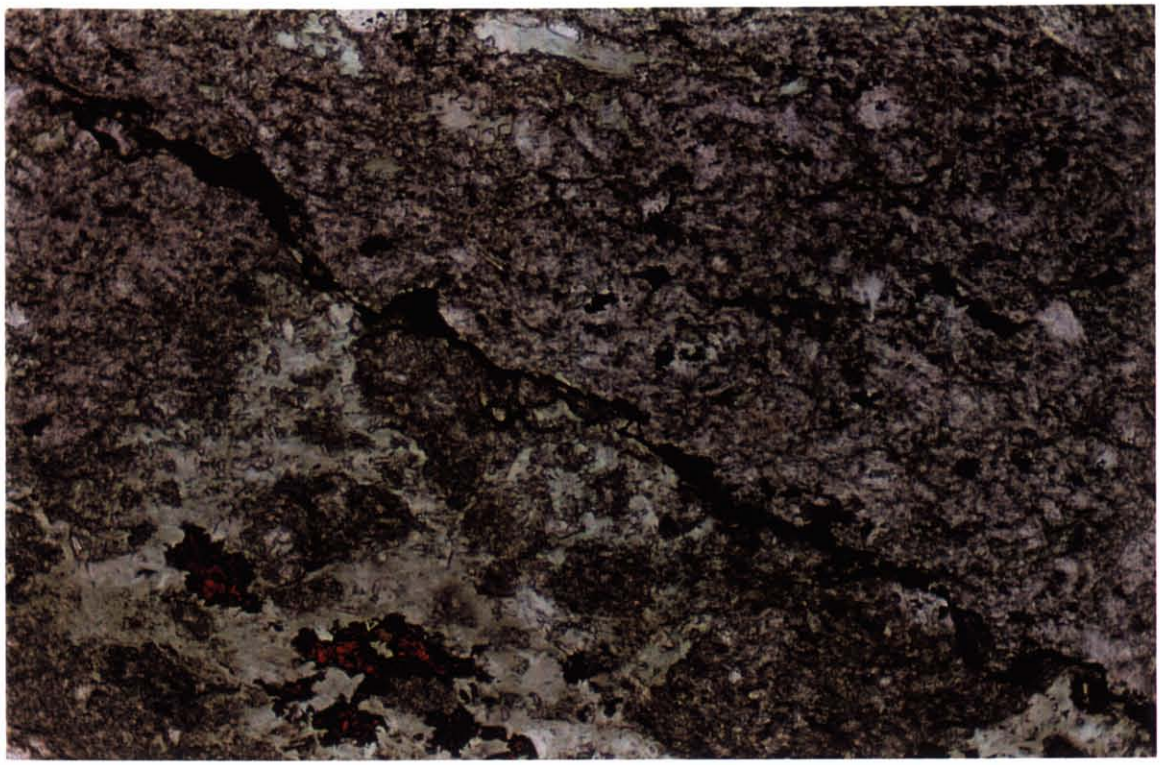

Fig 11 274756 0.18 mm

TS. OL. Detail of mudstone areas, separated by stylolite; tan-coloured sphalerite in a patch of chlorite alteration.

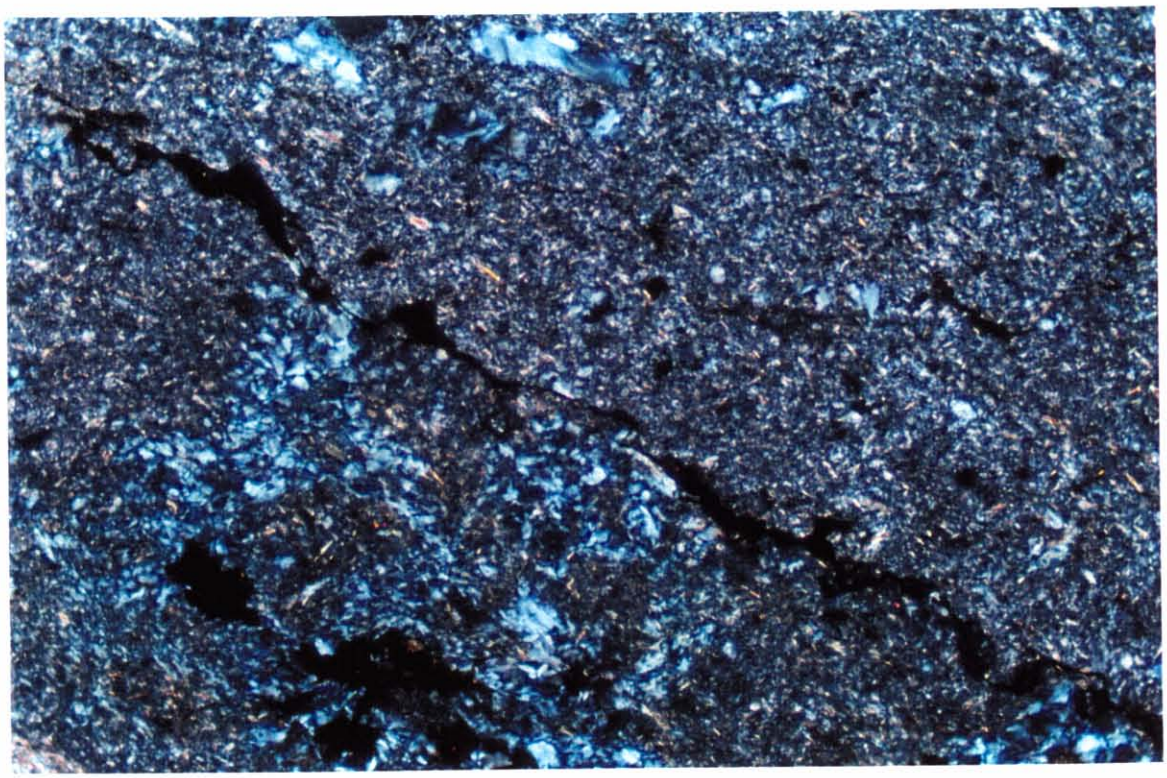

Fig 12 274756 0.18 mm

TS. Xnic equivalent of Fig 11.

274757

Rock with bulk composition mostly extremely fine clay sericite, with an 'aggregate-structure' which may be intraformational breccia within a mudstone, or lapilli tuff aggregate. Minor to locally abundant scattered volcanoclastic detritus. Ultrafine k-spar through some beds, fine quartz-chlorite-adularia alteration of the volcanic material. Minor fine sphalerite separately in mudstone, accompanying some altered detritus and in rare quartz stringers.

This stained offcut shows one layer minimum thickness 20mm dominated by clay-sericite but with ubiquitous ultrafine k-spar, and scattered adularia-altered ash fragments. This has a wavy but sharp contact against another layer of grey similarly fine clay-sericite, without the dispersed ultrafine k-spar, but with minor scattered k-spar altered volcanic fragments. An irregular network of microfissures on a scale of 10mm, including microstylolites occurs throughout the rock, to produce an aggregate structure as in 274753, which may be an internally disrupted mudstone (by pressure solution effects) or possibly it may be a lapilli tuff of altered volcanic groundmass material. The irregular contact between layers may be due to localised microslumping.

This facies incorporates up to 25% scattered volcanically-derived detritus, including sparse rounded quartz micro-phenocrysts and chlorite-quartz-adularia composites. There are sparse fragments of cryptocrystalline-siliceous rhyolitic groundmass material.

Sphalerite as grains 0.05mm to rarely 2mm are scattered throughout to form about 2% of the whole rock. These grains occur independently and apparently inherently in the mudstone, but sphalerite also occurs within several of the chlorite-quartz-adularia altered fragments, some along or on stylolites, and sparse sphalerite also occurs in crosscutting quartz stringers. In other words, sphalerite has apparent syngenetic, authigenic and epigenetic (mobilised) modes of occurrence.

645253

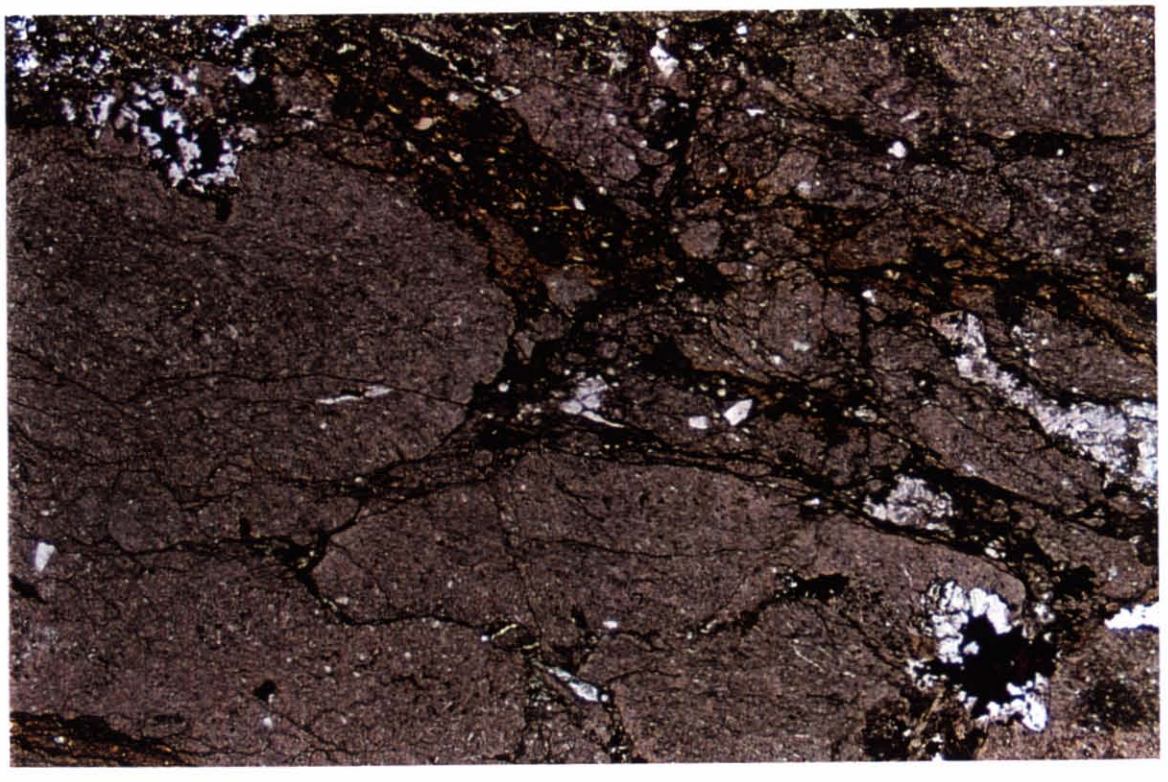

Fig 13 274757 0.45 mm

TS. OL. Domainal area (as in 274753) which may represent massive mudstone internally disrupted in-situ by pressure-solution (including development of stylolites), or by intraformational brecciation. Or possibly this structure represents ash-lapilli of altered volcanic groundmass material. Note red-brown sphalerite localised in clear quartz, also minute disseminated grains of sphalerite.

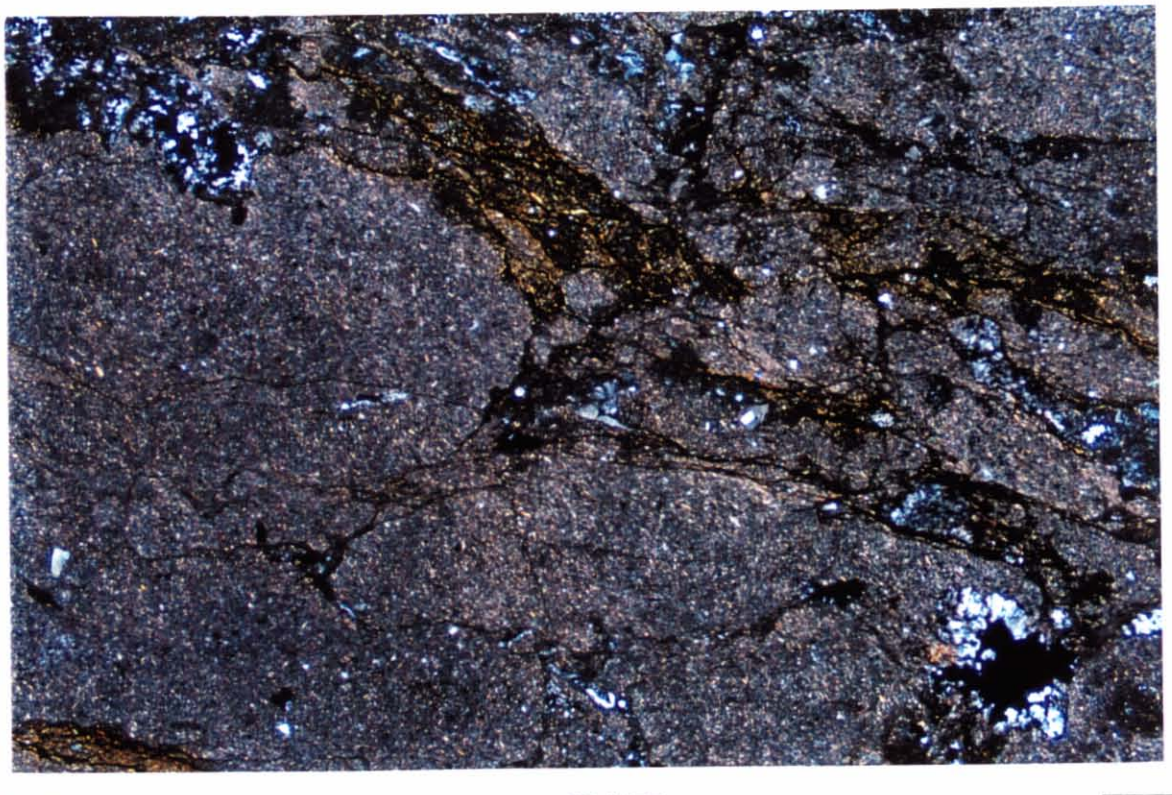

Fig 14 274757 0.45 mm

TS. Xnic equivalent of Fig 13.

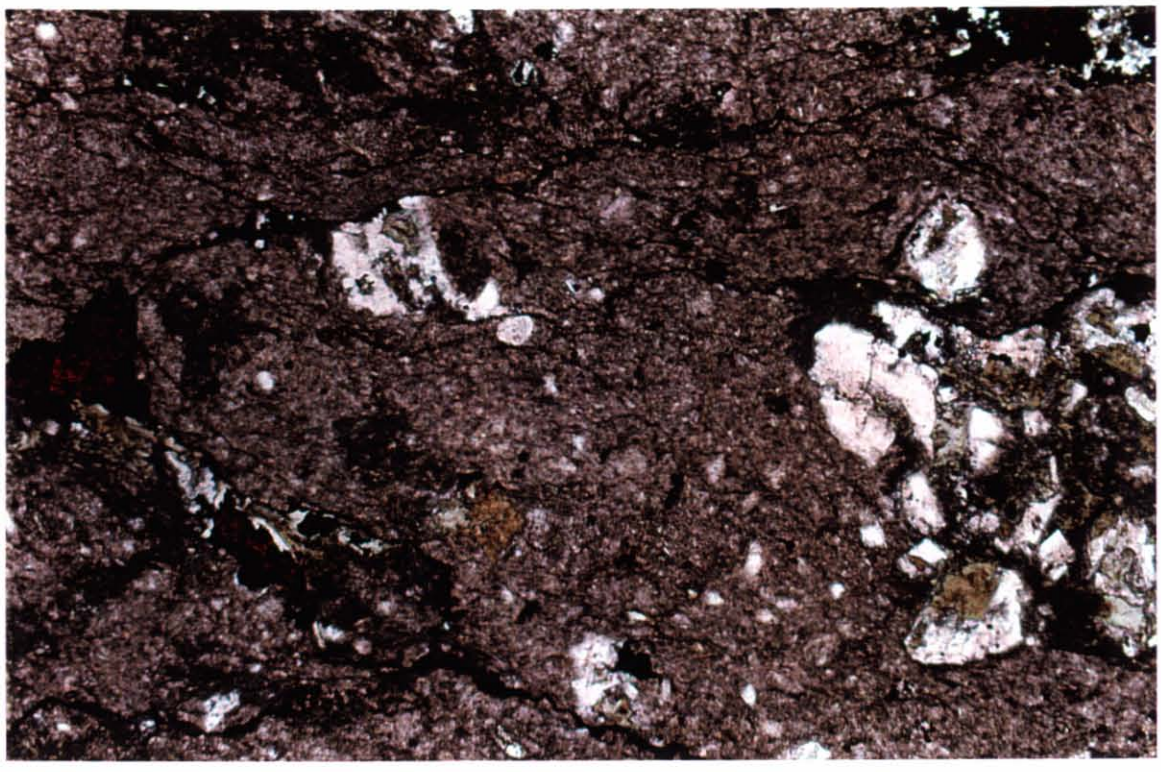

Fig 15 274757 0.18 mm

TS. OL. Higher magnification in Fig 14, including altered volcanic fragment. Red-brown sphalerite in microfissure.

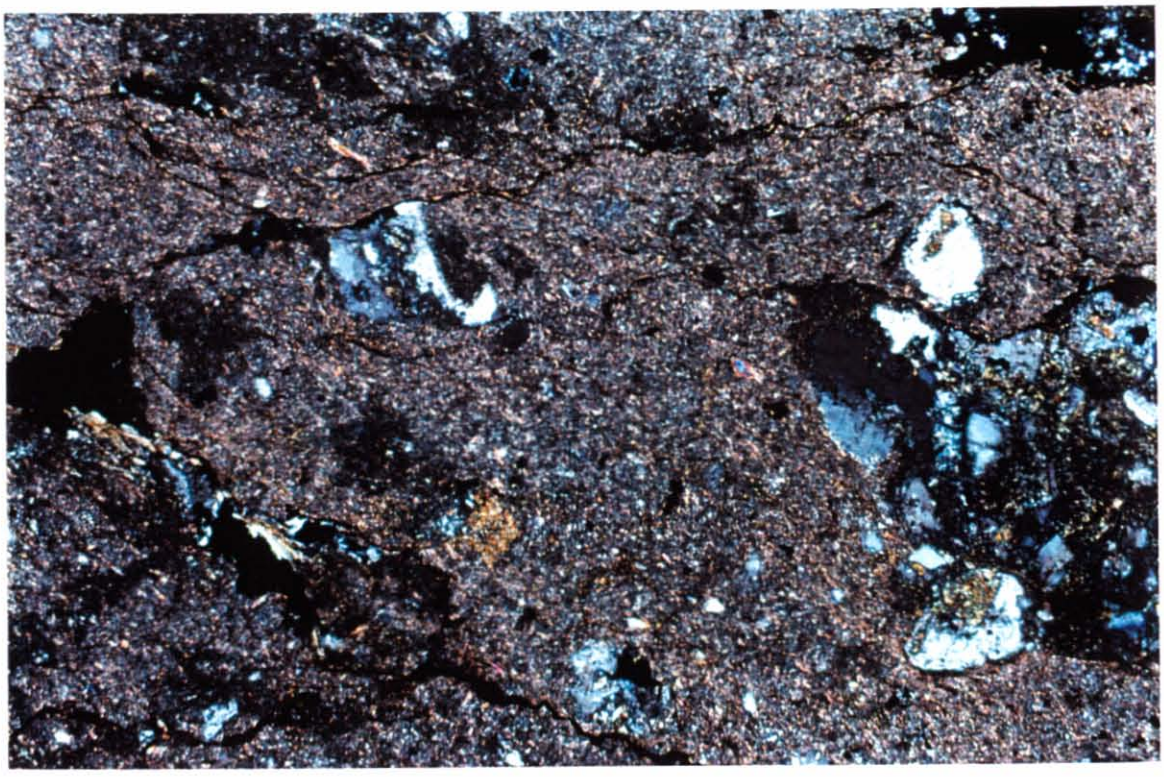

Fig 16 274757 0.18 mm

TS. Xnic equivalent of Fig 15.

274758

Irregularly lenticular-layered apparent glassy (vitric)-lithic pyroclastic, with inherent silica-sericite-chlorite alteration, incorporating semi-massive, intricately intergrown pyrite, galena, lesser chalcopyrite > sphalerite, mostly with associated carbonate. Compares with previous sample B1 (but with carbonate).

This is an apparent altered pyroclastic with a heterogeneous irregular lenticular-layered structure incorporating semi-massive sulphide mineralisation. It is the single sample in this suite most like sample B1, previously described for Barry Murphy, Pontifex Report 7666, 31/8/98, except that it contains carbonate as part of the alteration, more pyrite, no k-spar, and gold was not seen in this sample.

The sulphides and their approximate abundances are :

*	Pyrite ± minor marcasite	15%
*	Galena	10%
*	Chalcopyrite	5%
*	Sphalerite	3-5%

These sulphides are commonly composite, intricately intergrown in patches, less commonly they form crosscutting discontinuous veins and stringers ± carbonate.
Alteration and other non-ore domains are :

*	Extremely fine chlorite, in shredded to streaky lenses, apparently replacing glassy clasts pumice) as an essential pyroclastic component.	20%
*	Extremely fine sericite and clay-sericite, (some intricately mixed with chlorite) also replacing separate streaky lenses of ex-glass. Some incorporate minor quartz micromosaic and quartz microphenocrysts. [Some of these lenses are almost indistinguishable from the shaly-mudstone in other samples described above.]	15-20%
*	Carbonate, fine granular/crystalline mosaic, (?ankerite or siderite) in irregular lenses between and partly within the phyllosilicate lenses, also commonly intricately intergrown with sulphides.	10-15%
*	Quartz micromosaic, rather diffuse and irregular, at least partly original (rhyolitic) lava groundmass material as indicated by the scattered quartz microphenocrysts, but a microfelty texture also indicates secondary silicification.	20%

645256

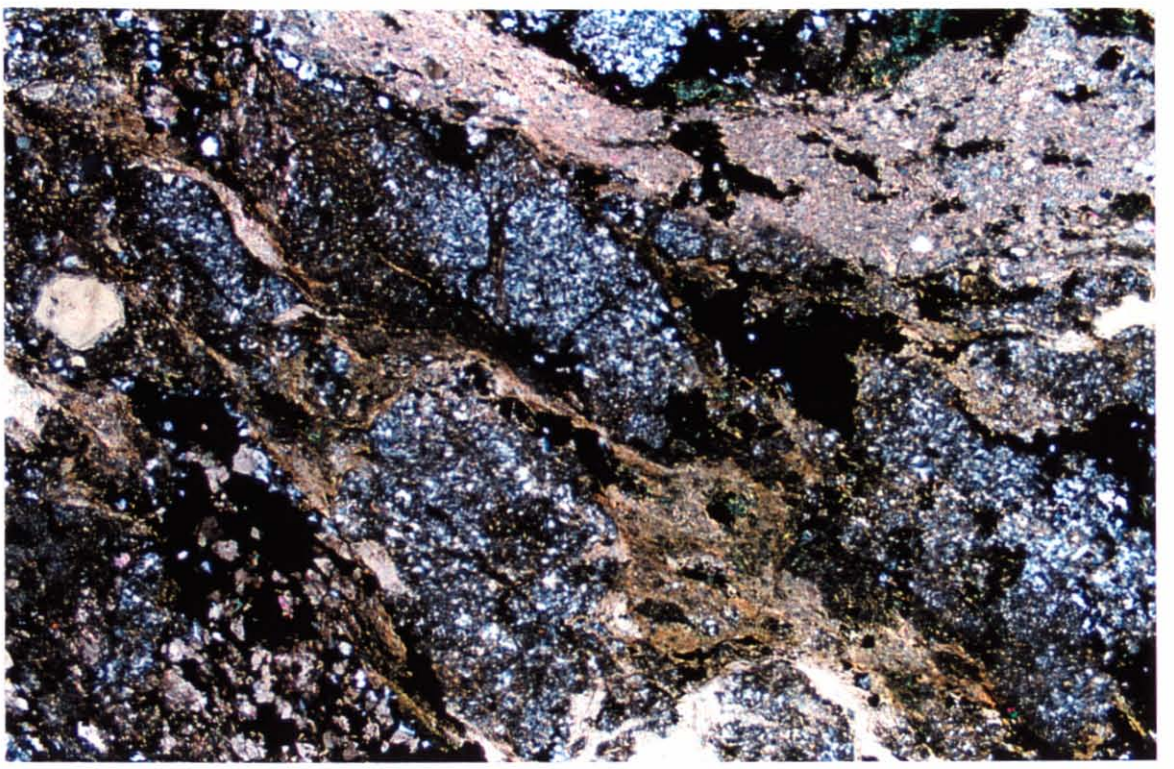

Fig 17 **274758** 0.45 mm

TS. Xnic. Shredded lenses of sericitised and chloritised fiamme, or pumiceous fragments within extremely fine silicified matrix. Cluster of black opaque sulphide with carbonate SW corner.

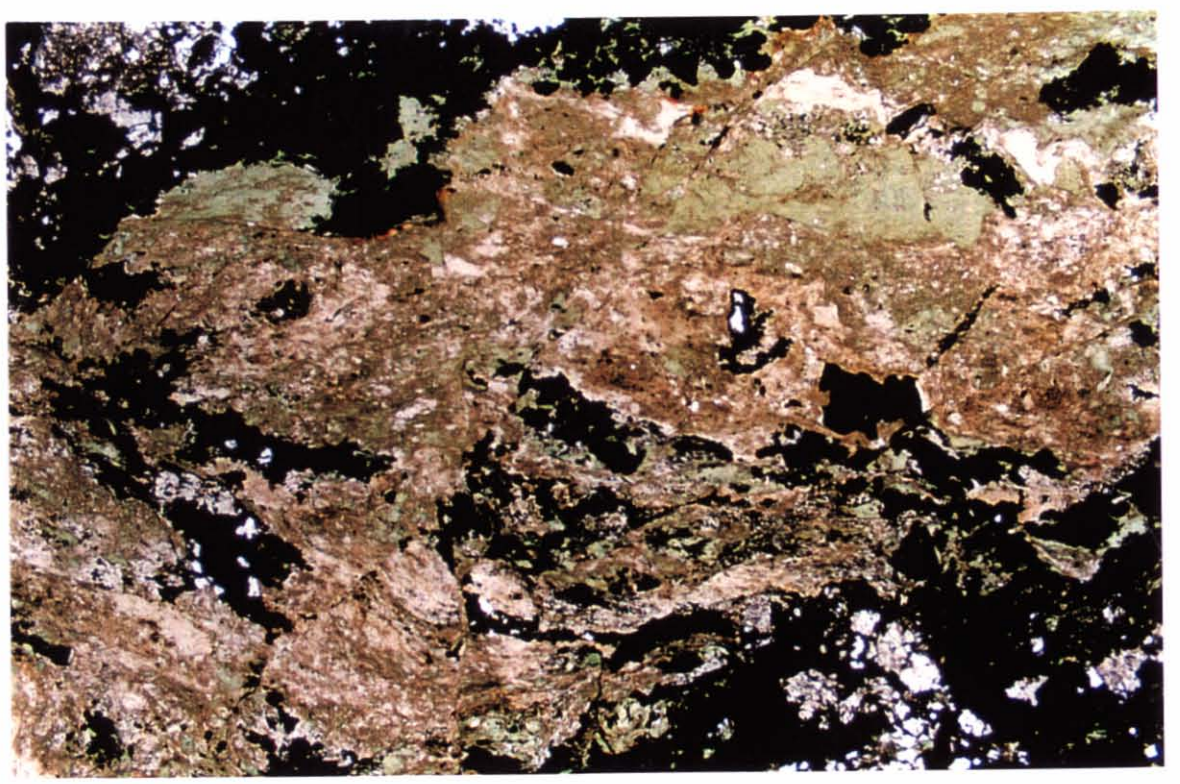

Fig 18 **274758** 0.45 mm

TS. OL. Chloritised fiamme (?pumice) with sulphides.

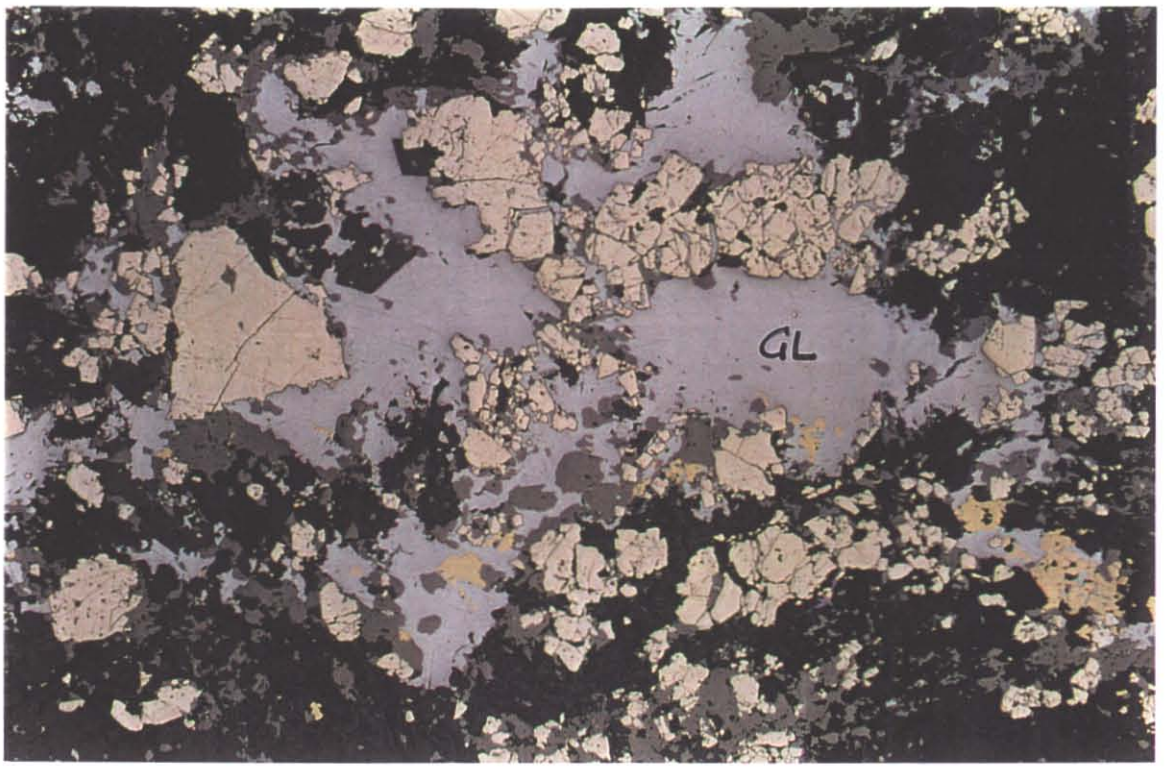

Fig 19 274758 0.18 mm

Polished section, general field, patchy galena GL, scattered/clustered pyrite crystals, minor localised sphalerite (dark grey grains around margins of galena).

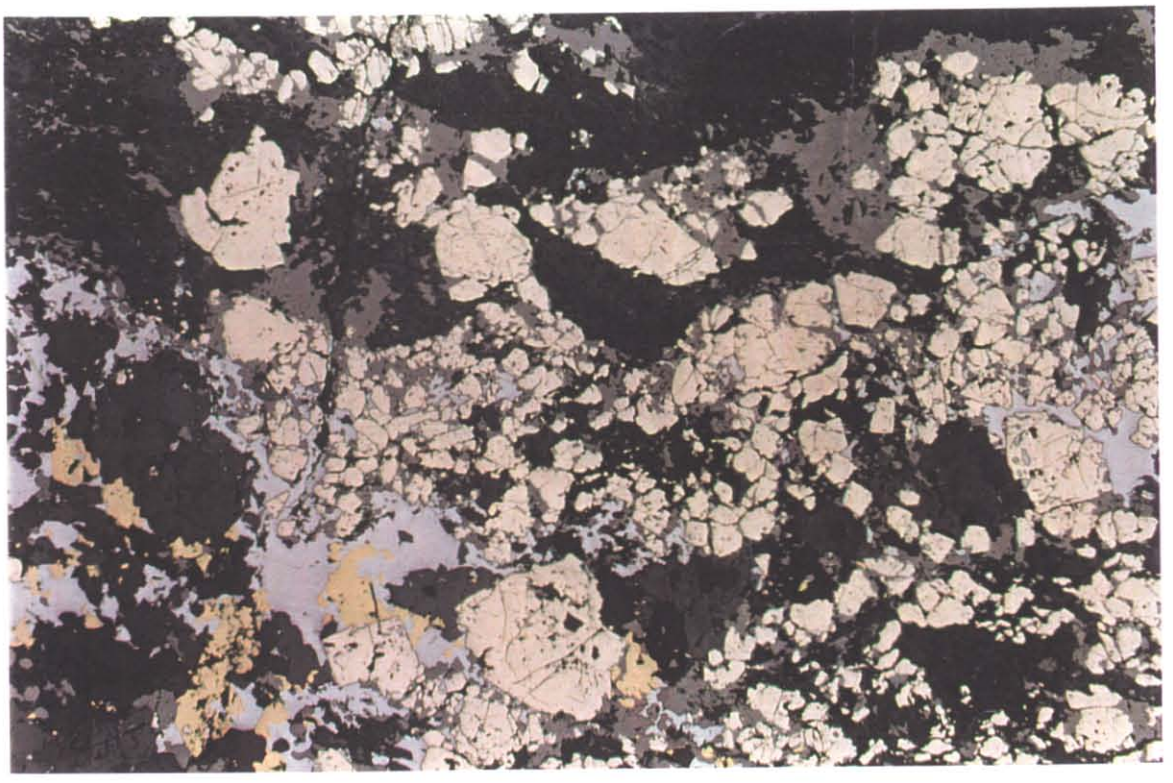

Fig 20 274758 0.18 mm

PS. Basically as for Fig 19.

274759

Irregular aggregate of massive sphalerite composite with carbonate gangue, also crowded with pyrite >> galena. All within an altered acid volcanic groundmass of extremely fine quartz clay-sericite, with minor scattered quartz microphenocrysts. Fine sphalerite along a vague microfoliation in this host rock.

This small sample consists of an irregular amoeboidal-shaped lens 20 x 30mm of fine massive sulphide + carbonate gangue, within an extremely fine, pale, quartz-clay-sericite host rock, which appears to consist of a single continuous coherent domain of altered lava (also with minor fine scattered sulphide).

The sulphide consists of irregularly patchy massive sphalerite (yellow to orange translucent crowded with abundant, scattered, fine to coarse grains of pyrite >> galena. An essential carbonate gangue (ankerite or siderite) is locally abundant, composite with these sulphides (mainly with sphalerite). Only rare-trace fine chalcopyrite is evident in sphalerite.

The host rock consists of extremely fine and somewhat diffuse siliceous micromosaic, crowded with intricately intergrown, equally fine and weakly schistose/shredded clay-sericite (± rare chlorite). This incorporates up to 10% scattered quartz microphenocrysts which appear to be in-situ, with inherent corroded margins. There are also accessory very small (<0.5mm) grains and lenses of sphalerite, similarly aligned along the vague prevailing microfoliation, and apparently inherent to the host altered volcanic groundmass.

645259

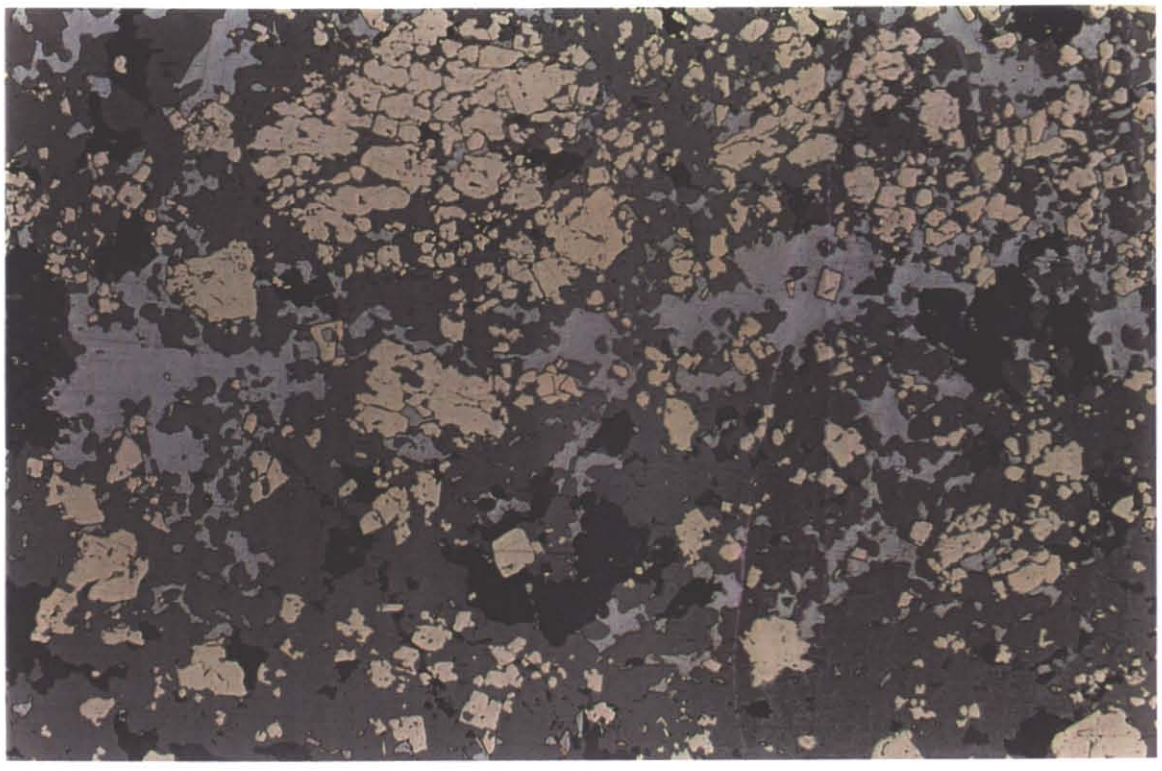

Fig 21 274759 0.18 mm

PS. Background is sphalerite, crowded with abundant pyrite crystals and irregular galena grains.

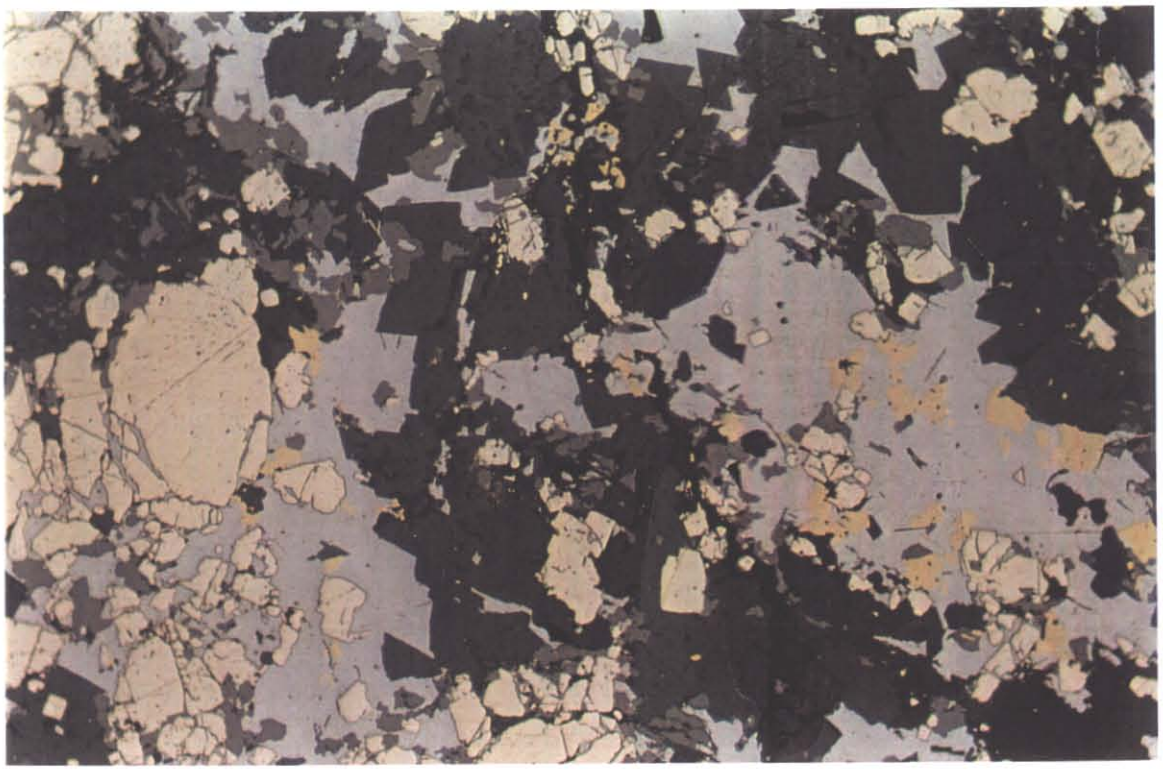

Fig 22 274759 0.09 mm

PS. Detail of sulphides, in (black) carbonate gangue.

645260

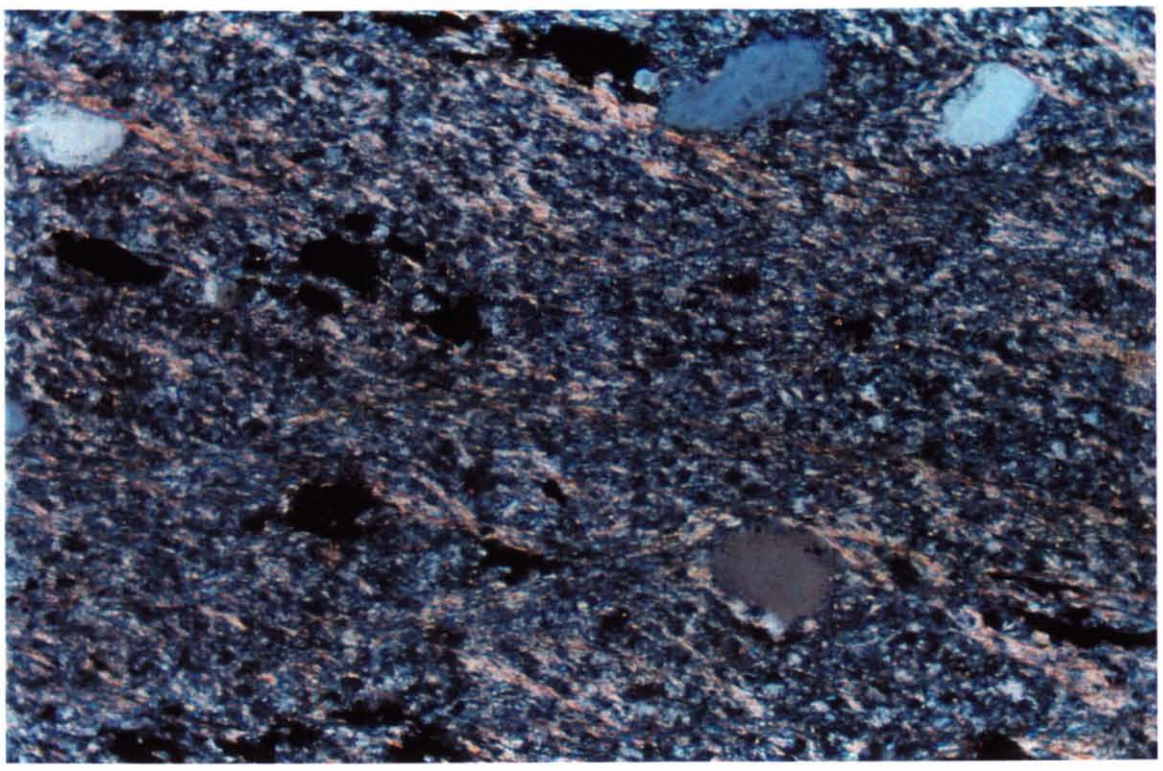

Fig 23 274759 0.09 mm

TS. Xnic. Host rock to sulphide aggregate, interpreted as silica-clay-sericite altered acid volcanic with quartz microphenocrysts, black scattered grains of sphalerite.

274760

Microlayered (fine bedded), clay-sericite-rich silty to medium grained, acid volcaniclastic sandstone. Minor pyrite, trace extremely fine sphalerite and galena in some layers.

This is a fairly homogeneous, pale grey, fine grained rock with a microlayering obvious in handspecimen (and in thin section). The offcut treated with sodium cobalti-nitrite shows greater and lesser very fine discrete grains of k-spar stained yellow, and a more diffuse weaker staining through the ultrafine (muddy) matrix.

Petrographically, these fine k-spar grains (0.05 to 0.2mm) also numerous quartz grains, lithic grains and lesser carbonate grains of similar size are identified as being derived from an acid volcanic, possibly representing reworked tuff. These all occur in variable concentration in different layers, representing volcaniclastic fine bedding, within clay-sericite, lesser chlorite and ultrafine silica almost certainly of the same derivation, but with a very weak metamorphic microfoliation defined by short threads of sericite. Minor fine pyrite crystals (total 2-3%) and trace much finer sphalerite > galena is scattered through several of the fine beds. There is a single crosscutting veinlet of fine crystalline pyrite.

This fine bedded volcaniclastic, silty to medium grained sediment, which has a very similar gross composition as other volcanics and mudstones together with mixed volcanic components in this suite. In some of these other rocks, the chlorite-clay-sericite-carbonate ± sulphide, represents primary in-situ alteration, in this rock (and in 274755, 756), these components appear to have been basically derived, albeit conceivably from previously altered volcanics.

645262

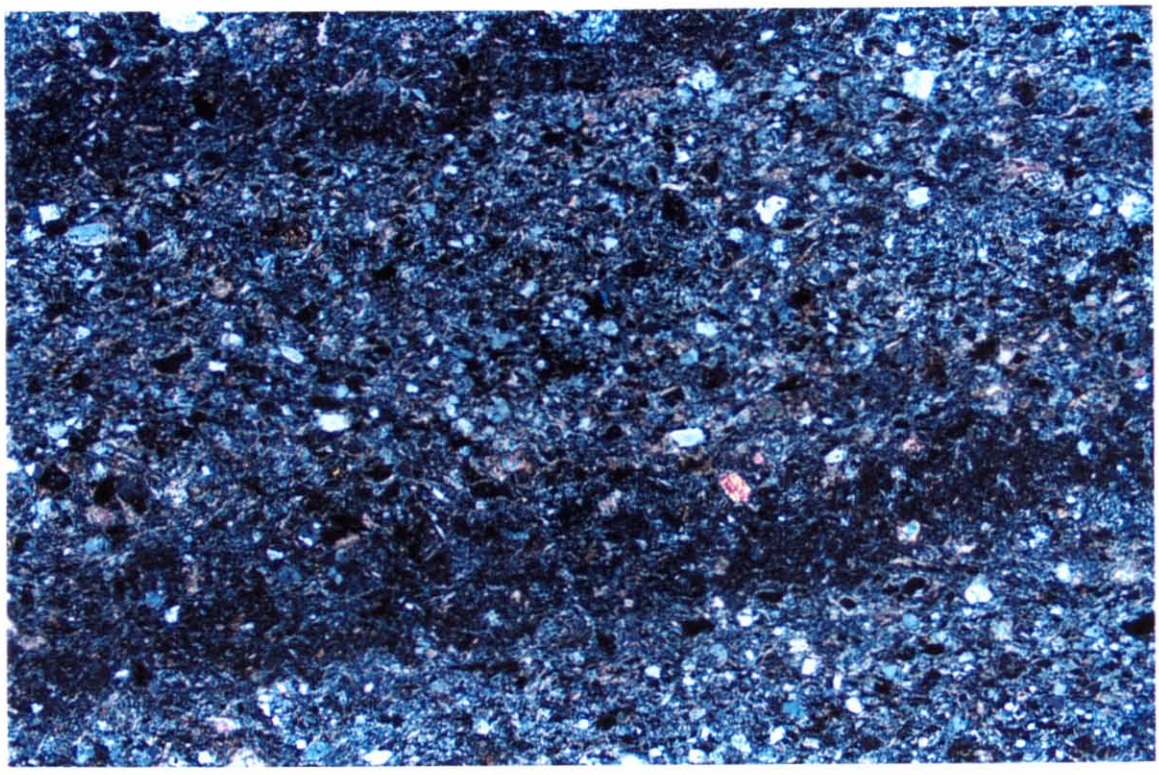

Fig 24 274760 0.45 mm

TS. Xnic. Extremely fine clay-sericite layers and intercalated fine sandy-clay-sericite layers in fine banded volcaniclastic sediment.

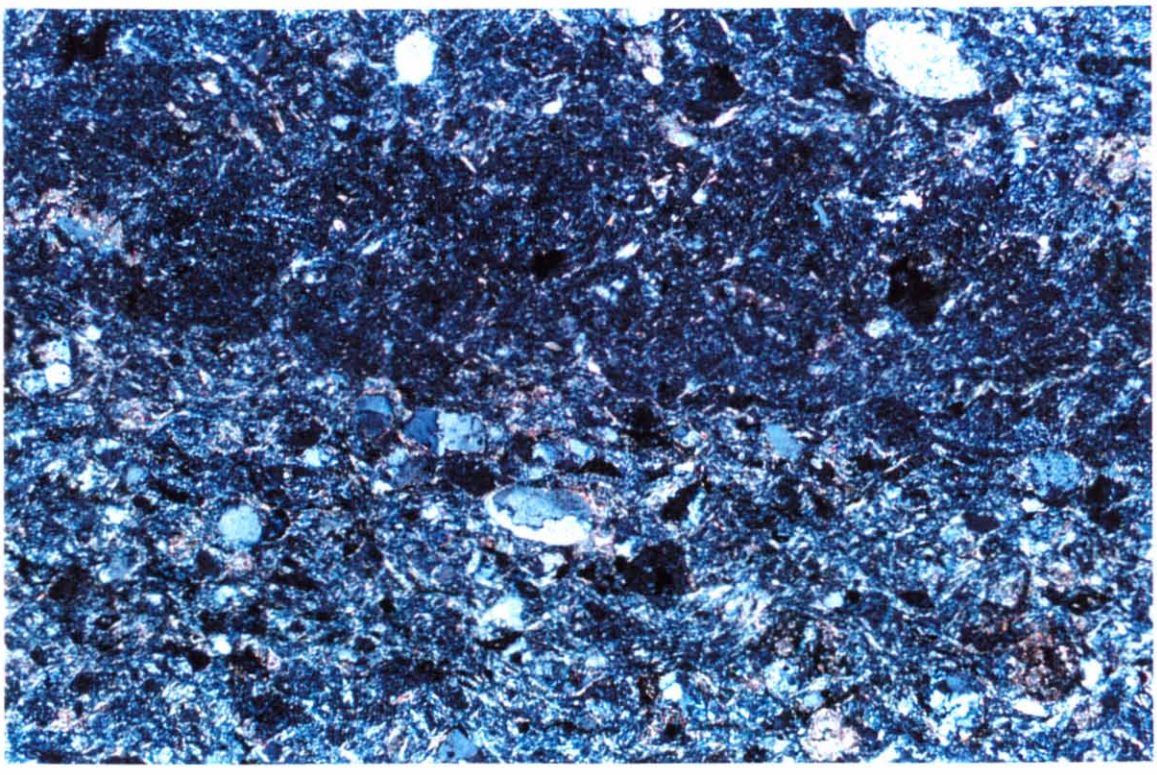

Fig 25 274760 0.18 mm

TS. Xnic. Detail of Fig. 24.

645263

274761

Massive acid volcanic groundmass host rock, with original felspar completely sericitised. Cut by major vein, and auxiliary stringers of bladed hematite + quartz, in which the hematite appears to be converting to (pseudomorphous) bladed magnetite. Accessory disseminated martite crystals of rare oxidised pyrite in some quartz stringers.

A vein to 10mm wide of coarse bladed hematite and numerous related but less continuous stringers of hematite form about 10% of this section area, all within a fairly homogeneous, pale, massive and very fine grained host rock. Petrographically, the host rock is seen to consist of a diffuse micromosaic of quartz and intricately mixed clay-sericite, interpreted to represent original quartzofelspathic microcrystalline volcanic groundmass (with ex-felspar now sericitised). There is however no evidence of discrete phenocrysts or related diagnostic textures to positively confirm this interpretation.

The main vein, and the somewhat detached random stringers, also even finer networks of threads, all with abundant micaceous hematite with a crystal size commensurate with the width of the veins. These veins also consist of quartz, all apparently filling and healing fractures. Lesser fine single crystals of granular hematite, (martite after magnetite) are disseminated outside of the veins. Minor small patches/grains and irregular lenses of hydrothermal quartz and/or sericite, without iron oxide(s) also occur sporadically through the host rock, and there are several goethite replicas after small pyrite crystals in some of these.

It is of interest that the bladed hematite, particularly the coarse hematite in the main vein appears to be converting to (pseudomorphous replacement by) magnetite, presumably due to change in partial pressure of oxygen during the final stages of hydrothermal introduction of these veins.

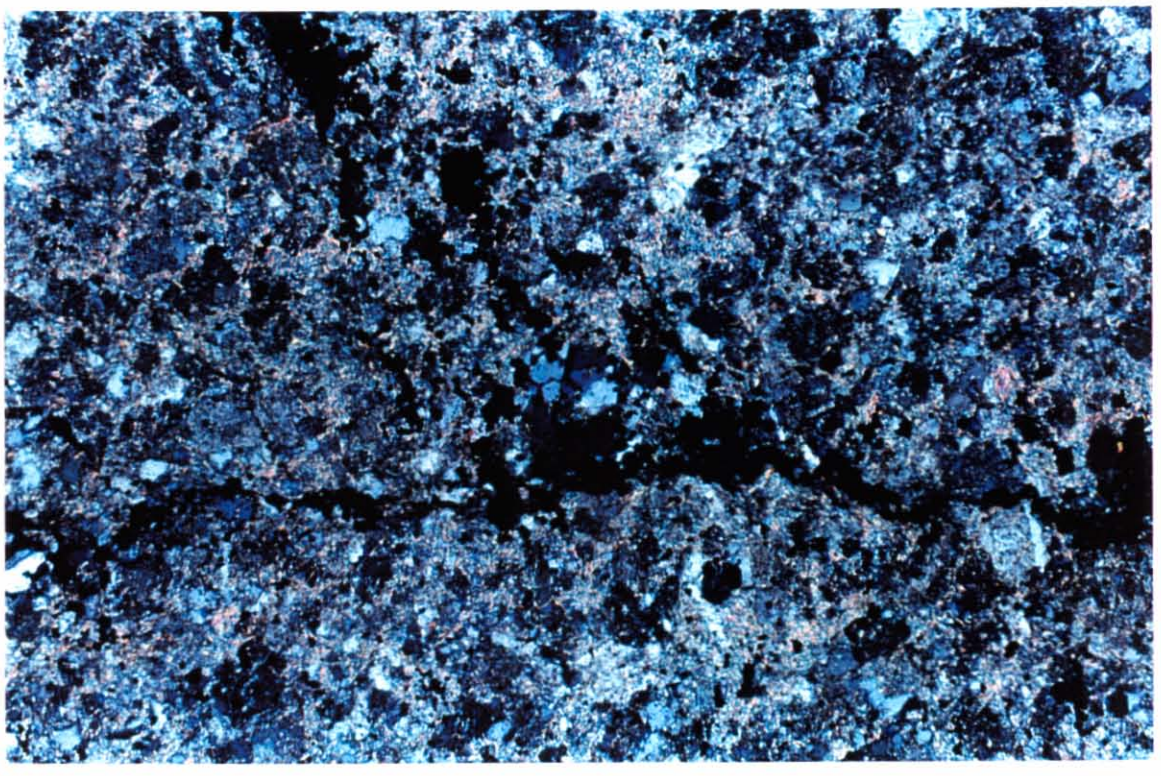

Fig 26 **274761** 0.18 mm

TS. Xnic. Host rock of diffuse quartz/sericitised-felspar micromosaic representing altered acid volcanic, cut by stringers of hematite.

Fig 27 **274761** 0.09 mm

PS. Coarse bladed hematite in main vein, apparently partly converting to magnetite (pale brownish).

Appendix 1

Rockchip assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Prospect	Ag_ppm	Al_ppm	As_ppm	Au_ppm	Ba_ppm	Be_ppm	Bi_ppm	Ca_ppm	Cd_ppm	Ce_ppm	Co_ppm	Cr_ppm
274701	ROCKCHIP	385370	5347566	AGD66	BEATRICE	1.8	54278	38	0.031	1112	0.9	0.8	430	4.9	121.860001	4	60
274702	ROCKCHIP	385370	5347566	AGD66	BEATRICE	2.1	56380	24	0.059	684	0.9	0.8	357	11.2	110.050003	2.8	12
274703	ROCKCHIP	385380	5347580	AGD66	BEATRICE	0.6	71691	19	0.013	426	1.4	0.5	608	2.6	107.980003	2.9	41
274704	ROCKCHIP	385380	5347580	AGD66	BEATRICE	0.6	56257	11	0.01	438	1.2	0.5	449	2.9	137.979996	3.9	-10
274705	ROCKCHIP	385390	5347610	AGD66	BEATRICE	5.6	62399	12	0.132	522	1.4	0.2	317	26.4	110.349998	5	56
274706	ROCKCHIP	385390	5347610	AGD66	BEATRICE	0.4	65341	6	0.003	798	1.7	-0.1	930	6.8	125.760002	2.9	-10
274707	ROCKCHIP	385370	5347625	AGD66	BEATRICE	5.1	50104	27	0.053	728	0.9	0.7	155	24.3	82.8499985	3	53
274708	ROCKCHIP	385370	5347605	AGD66	BEATRICE	1.3	49222	8	0.156	1036	0.8	3.7	157	0.6	122.760002	-0.2	-10
274709	ROCKCHIP	385392	5337654	AGD66	BEATRICE	3.2	56954	24	0.101	822	1.2	0.3	763	67.8	67.25	3	79
274710	ROCKCHIP	385394	5337654	AGD66	BEATRICE	9.3	58390	7	0.365	296	1.1	0.5	582	76.8	110.269997	2.9	14
274711	ROCKCHIP	385394	5337654	AGD66	BEATRICE	11.1	56446	22	0.702	626	1.3	1.4	756	145.8	110.269997	5	91
274712	ROCKCHIP	385400	5347685	AGD66	BEATRICE	0.7	58054	29	0.008	494	1.3	0.1	3620	3.5	124.199997	22.9	11
274713	ROCKCHIP	385458	5347690	AGD66	BEATRICE	0.3	65205	3	0.007	1970	1.6	-0.1	197	0.7	49.7000008	1	15
274714	ROCKCHIP	385310	5347590	AGD66	BEATRICE	16.1	60738	7	2.399	330	0.6	1	546	290.2	183.610001	27.3	18
274715	ROCKCHIP	385310	5347595	AGD66	BEATRICE	5.1	60480	13	0.129	1388	0.8	1.3	1050	40.4	146.820007	6.1	44
274716	ROCKCHIP	385318	5347655	AGD66	BEATRICE	1.9	65350	15	0.009	2279	0.8	0.2	221	3.8	77.9199982	3.1	39
274717	ROCKCHIP	385360	5347680	AGD66	BEATRICE	4.9	59277	50	0.123	1096	1.2	1.4	255	24.3	92.3399963	6.1	60
274718	ROCKCHIP	385370	5347708	AGD66	BEATRICE	5	63071	85	0.125	460	1.5	0.4	589	33.5	111.720001	3	-10
274719	ROCKCHIP	385340	5347870	AGD66	BEATRICE	0.6	57800	103	0.005	500	1.9	0.9	1117	0.8	87.3600006	75.6	150
274721	ROCKCHIP	385435	5347934	AGD66	BEATRICE	4.7	67705	211	0.009	596	2.4	1.6	3441	48.8	94.3899994	14.8	83
274722	ROCKCHIP	385470	5347970	AGD66	BEATRICE	0.7	63931	213	0.006	562	2.3	1.2	1567	1	91.5699997	74.4	134
274723	ROCKCHIP	385050	5346990	AGD66	BEATRICE	0.3	85876	49	0.004	1334	2.4	0.4	3260	2.1	102.389999	30.1	156
274724	ROCKCHIP	385050	5346990	AGD66	BEATRICE	0.7	75189	43	0.007	1394	2.9	0.4	483	2.8	87.8199997	20.3	119
274725	ROCKCHIP	385110	5347125	AGD66	BEATRICE	1	76285	49	0.012	640	2.4	0.9	1697	2	94.9700012	31.6	145

645265

Appendix 1

Rockchip assay results

Cs ppm	Dy ppm	Er ppm	Eu ppm	Fe ppm	Ga ppm	Gd ppm	Hf ppm	Ho ppm	K ppm	La ppm	Li ppm	Lu ppm	Mg ppm	Mn ppm	Mo ppm	Na ppm	Nb ppm
1.78	5.1	2.9	1.1	62867	14	7.2	4.3	0.98	19600	60.3199997	5.7	0.5	3915	2613	0.6	228	4
1.9	5.3	3.2	1.14	60797	14.1	6.9	4.6	1.05	21800	55.3899994	5.5	0.5	3520	2441	5.4	216	13.4
2.48	7.5	4.2	1.18	47703	15.1	8.5	5.1	1.45	31900	53.6899986	5.1	0.7	5550	1678	3.7	265	12
1.75	7	3.6	1.37	66989	14.2	8.7	4.6	1.3200001	19600	70.5899963	6.4	0.6	7185	2332	1.9	177	5.6
1.95	5.4	3.3	1.21	43767	14.6	6.8	4.6	1.54	29000	54.5699997	6.2	0.6	5465	3276	2.5	221	8.4
2.13	6.1	3.4	1.71	44352	16.7	7.7	4.5	1.1900001	31400	61.7299995	8.4	0.6	9695	9289	1.4	211	6.5
2.37	3.3	1.9	1.22	42360	12.6	4.3	3.2	0.69	22400	42.3499985	5.6	0.4	6840	974.29999	13.9	216	4.8
2.79	4.2	2.6	1.39	26205	15.1	6.4	4.2	0.85	31500	63.7799988	3.5	0.5	2680	261.79999	2.6	329	5.2
4.15	4.2	2.8	0.64	53784	14.1	4.8	4.5	0.88	34300	31.0400009	4.7	0.5	4400	4378	3.3	328	10.9
2.53	5.7	3.3	0.9	57943	14.8	7.1	4.5	1.13	24600	55.6500015	5.2	0.5	4225	2414	2.8	219	6.8
3.48	5.7	3.3	0.9	57680	14	7.1	4.1	1.13	28700	55.6500015	5.3	0.5	4630	3423	2.1	248	4
1.51	6.6	4	1.46	51693	14.6	8.1	4.9	1.36	24600	59.3499985	11.4	0.7	6405	5493	0.7	210	5.1
2.14	1.7	1.6	-0.05	9550	16.2	1.4	3.8	0.41	48200	22.9599991	3.1	0.5	1585	427.5	0.1	553	8.3
1.41	7.1	3	2.61	104000	19.9	13.2	3.6	1.1799999	28800	81.9199982	18.7	0.5	12995	5902	0.1	385	5.8
2.65	5.9	3	1.58	39165	15.3	8.5	4.1	1.08	38100	75.1100006	7.3	0.5	6430	1566	2.2	428	7.4
2.13	5.7	3.6	1.13	37226	16.9	5.8	5.1	1.1799999	51300	39.6599998	7.9	0.6	6475	1112	0.7	649	5.9
3.14	3.5	2	0.78	33667	16.5	4.9	3.3	0.68	32300	47.5999985	7.7	0.4	7905	823.20001	8.9	391	8.5
3.51	6	3.2	1.21	30163	15.5	7.2	4.5	1.13	34700	56.6899986	4.5	0.5	2620	1040	2.1	251	7.6
3.09	3.3	2	0.96	110000	16.1	4.3	2.5	0.64	14800	37.8699989	24.1	0.4	19790	7403	0.5	202	5.2
3.33	4.1	2.3	1.21	52219	17.6	5.1	3.6	0.77	30900	45.9799995	10.7	0.4	9840	2975	7.9	344	4.2
4.12	4	2.4	1.04	114000	17.3	4.8	2.7	0.8	19100	41.2700005	23.7	0.4	16715	13043	1.2	265	3.6
6.46	4.1	2.3	1.25	44598	21.4	5.3	3.7	0.77	36400	46.7900009	18.6	0.4	16975	6932	2.9	4636	5.6
6.36	3.8	2.4	0.93	35524	18.6	4.8	3.3	0.8	35200	50.7200012	14.4	0.5	11710	4589	2.1	2090	5
6.87	4.3	2.3	1.41	55448	19.9	5.5	3.6	0.81	33500	45.7200012	18.6	0.4	15575	2092	1.7	3633	5.1

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Rockchip assay results

Nd_ppm	Ni_ppm	P_ppm	Pb_ppm	Pd_ppm	Pr_ppm	Pt_ppm	Rb_ppm	Sb_ppm	Sc_ppm	Se_ppm	Sm_ppm	Sn_ppm	Sr_ppm	Ta_ppm	Tb_ppm	Te_ppm	Th_ppm	Ti_ppm
47.9000015	4	158	1196	-0.001	12.91	-0.005	111.13	6.8	8	-1	8.9	2.2	10.2	0.5	0.91	2.1	15.54	1401
43.5999985	6	156	1812	-0.001	11.68	-0.005	127.05	11.6	8	4	8.3	2.3	6.6	9.8	0.93	2.1	15.92	1445
44.5	2	221	277	-0.001	11.87	-0.005	190.03	7.9	10	3	9.1	2.7	4.7	6.8	1.23	1.5	18.49	1816
54.4000015	-2	155	283	-0.001	14.64	-0.005	121.56	4.6	8	2	10.3	1.9	6.5	1.7	1.14	0.5	17.03	1327
43.5999985	2	198	6300	-0.001	11.71	-0.005	187.11	6.5	10	3	8.2	2.9	4.4	3.6	0.88	0.6	16.89	1572
48.7000008	4	198	366	-0.001	13.03	-0.005	219.08	4.1	10	2	9.3	2.8	7.3	2.2	1.01	0.3	16.03	1749
31.6000004	22	287	6376	0.003	8.7200003	-0.005	141.17999	7	8	2	5.7	2.3	10	1.4	0.55	0.2	16.82	1616
49.2999992	-2	158	188	-0.001	13.24	-0.005	178.97	3.5	8	2	8.9	2	20	1.2	0.73	-0.2	15.1	1692
28.6000004	2	184	3770	-0.001	7.5599999	-0.005	179.64999	6	10	3	5.8	3.1	14	4.7	0.65	0.4	15.82	1573
43.9000015	-2	227	20960	-0.001	11.82	-0.005	137.23	6.1	10	3	8.2	3.4	6.1	2.7	0.92	0.2	16.21	1463
43.9000015	2	228	21890	-0.001	11.82	-0.005	161.25999	6	10	3	8.2	4.3	7.6	1.1	0.92	-0.2	14.75	1429
49.0999985	16	914	787	-0.001	13.13	-0.005	152.78999	6.2	10	2	9.5	2.4	22.6	1.1	1.06	-0.2	18.21	1252
10.1000004	-2	-30	87	-0.001	3.6900001	-0.005	241.58	1.4	4	-1	1.6	2	19.1	1.4	0.24	-0.2	48.36	553
102.099998	10	256	20100	-0.001	24.24	-0.005	113.79	10.9	10	6	20.9	1.7	27	1.6	1.42	-0.2	13.01	1343
57.7999992	14	715	7655	0.001	15.57	-0.005	194.8	5.6	10	4	10.9	3.6	29.5	2.1	1.08	-0.2	19.3	1829
32.2000008	2	212	1031	-0.001	8.3900003	-0.005	226.83	6.9	12	1	6.6	2.4	33	1.3	0.85	-0.2	18.19	1761
36.0999985	34	380	3725	0.002	9.96	-0.005	176.91	7.7	12	3	6.5	3.5	14.6	5.5	0.63	-0.2	17.27	1958
44.9000015	-2	281	97790	-0.001	12.14	-0.005	231.21001	7.4	10	2	8.5	2.8	4.7	2.3	0.98	-0.2	21.58	1565
28.5	78	864	868	0.004	7.6399999	-0.005	87.769997	12.3	14	2	5.3	2.6	19.6	1.7	0.54	-0.2	11.89	1996
36.2999992	50	527	4510	0.003	9.8199997	-0.005	162.61	27.1	14	4	6.8	4.7	13.7	1	0.68	-0.2	16.46	2144
30.6000004	66	1111	1285	0.003	8.1400003	-0.005	103.1	17.5	14	2	5.6	2.8	30.4	0.7	0.65	-0.2	12.79	2374
36.4000015	82	391	99	0.003	9.9399996	-0.005	202.91	5.1	18	2	6.6	2.9	35.9	1.4	0.7	-0.2	16.01	2393
32.9000015	48	369	387	0.002	9.4099998	-0.005	195.56	3.8	14	1	5.9	2.5	18.4	1	0.63	-0.2	18.46	2242
36.5	80	464	229	0.004	9.96	-0.005	186.07001	4.3	18	2	6.8	3.4	25.1	1.2	0.73	-0.2	16.35	2394

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Tl_ppm	Tm_ppm	V_ppm	W_ppm	Y_ppm	Yb_ppm	Zn_ppm	Zr_ppm								
0.8	0.45	8	4.5	26.89	3	1792	147.8								
1	0.46	8	12.6	30.13	3.2	4397	159.2								
1.4	0.6	10	10.8	41.81	4.1	747	181								
0.9	0.53	6	5.5	35.28	3.6	939	163.4								
1.3	0.49	10	7.3	31.03	3.3	9862	162.8								
1.3	0.51	10	4.8	34.54	3.5	1666	158.9								
1.1	0.29	58	4.3	18.49	2.1	6270	107.6								
1.4	0.41	10	4.5	22.38	2.9	124	146.8								
1.9	0.42	8	8.3	23.63	3	22481	160.7								
1	0.48	8	5.9	31.52	3.2	27012	157.4								
1.7	0.48	8	4.7	31.89	3.2	45167	144.6								
1	0.6	16	3	38.48	3.9	843	173.3								
1.5	0.3	-2	2.1	13.94	2.6	226	88.9								
1.3	0.44	12	4.6	32.57	2.8	108286	122.8								
1.9	0.44	48	6.3	29.53	2.9	12316	138.9								
2.7	0.53	14	4.6	32.36	3.7	1167	179.3								
1.5	0.3	80	5.9	18.93	2.1	7003	110.8								
1.7	0.49	10	4.8	29.84	3.2	11379	148.1								
0.9	0.3	100	4.4	21.13	2.1	241	88.7								
1.3	0.36	104	3.7	22.41	2.5	13293	122								
1	0.35	114	4.3	25.48	2.4	316	91.9								
1.4	0.36	94	3.4	22.01	2.6	298	129.7								
1.3	0.38	88	2.3	26.06	2.8	555	110.6								
2	0.36	108	3	23.36	2.5	561	131.1								

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APPENDIX 3

BEATRICE PROSPECT

MMI Assay Results,

SDS Number 2347	Samples 272925-273155
SDS Number 2349	Samples 273156-273504
SDS Number 3704	Samples 274201-274295
SDS Number 3724	Samples 330302-330325

Sample_N	Sample_S	UTM_East	UTM_Nort	UTM_Datu	Local_Eas	Local_Nort	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm
272925	MMI	386042.2	5347769	AGD66	-300	2000	7200	0.417	600	2	31	0.041	0.022
272926	MMI	385996.4	5347801	AGD66	-350	2000	4400	0.747	400	1.8	40	0.026	0.018
272927	MMI	385950.7	5347834	AGD66	-400	2000	2300	5.2	630	4	271	0.025	0.04
272928	MMI	385905	5347866	AGD66	-450	2000	550	7	750	10.5	290	0.139	0.56
272929	MMI	385859.3	5347899	AGD66	-500	2000	-50	1.2	280	3.9	83	0.031	0.058
272930	MMI	385813.5	5347931	AGD66	-550	2000	-50	0.301	580	3	90	0.236	0.046
272931	MMI	385767.8	5347964	AGD66	-600	2000	-50	0.366	50	1.4	15	0.053	0.017
272932	MMI	385722.1	5347996	AGD66	-650	2000	-50	0.309	150	1.9	20	0.157	0.029
272933	MMI	385676.3	5348028	AGD66	-700	2000	-50	0.355	200	2	47	0.042	0.021
272934	MMI	385630.6	5348061	AGD66	-750	2000	36000	0.247	1780	4.4	114	0.1	0.031
272935	MMI	385584.9	5348093	AGD66	-800	2000	22000	9.6	1850	9.2	618	0.094	0.085
272936	MMI	385543.3	5348125	AGD66	-850	2000	20000	14.5	1630	3.8	804	0.041	0.628
272937	MMI	385501.8	5348157	AGD66	-900	2000	4300	15.5	1020	4.9	492	0.203	11.5
272938	MMI	385460.3	5348188	AGD66	-950	2000	5300	17.5	980	3.5	447	0.03	0.188
272939	MMI	385418.7	5348220	AGD66	-1000	2000	8900	2.5	1020	2.2	100	0.098	0.076
272940	MMI	385418.7	5348220	AGD66	-1000	2000	9000	16	1280	2.4	293	0.1	0.137
272941	MMI	385389.2	5348248	AGD66	-1050	2000	3200	34	1390	5.6	592	0.037	3.6
272942	MMI	385359.7	5348275	AGD66	-1100	2000	4300	9.4	890	4.1	255	0.017	0.126
272943	MMI	385330.2	5348303	AGD66	-1150	2000	38000	2.9	640	0.898	271	0.055	0.036
272944	MMI	385300.7	5348331	AGD66	-1200	2000	14000	0.747	1000	2.4	139	0.459	0.108
272945	MMI	385253.4	5348323	AGD66	-1250	2000	10000	9.3	780	4.5	278	0.239	0.087
272946	MMI	385206.1	5348316	AGD66	-1300	2000	18000	3.2	980	3.5	208	0.199	0.018
272947	MMI	385147.9	5348327	AGD66	-1350	2000	11000	1.1	670	2.5	116	0.123	0.039
272948	MMI	385078.9	5348355	AGD66	-1400	2000	12000	2.3	380	1.2	152	0.082	0.045

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Appendix 2

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
272949	MMI	385029	5348385	AGD66	-1450	2000	12000	7.30	670	1.7	180	0.029	0.12	3.1	0.03
272950	MMI	384980	5348415	AGD66	-1500	2000	6300	14.00	400	2.2	170	0.009	0.04	1.6	0.019
272951	MMI	384930	5348445	AGD66	-1550	2000	5400	3.70	370	1.3	134	0.033	0.04	1.8	0.025
272952	MMI	384880	5348475	AGD66	-1600	2000	1100	1.40	330	1.6	20	0.173	0.05	0.9	0.01
272953	MMI	384828	5348511	AGD66	-1650	2000	2100	7.90	250	2.1	91	0.009	0.09	0.9	0.016
272954	MMI	384776	5348547	AGD66	-1700	2000	4100	9.10	1030	2.1	180	0.010	0.09	3.2	0.027
272955	MMI	384724	5348583	AGD66	-1750	2000	2300	2.90	1110	0.9	65	0.029	0.07	2.4	0.012
272956	MMI	384672	5348619	AGD66	-1800	2000	1400	2.90	890	0.8	60	0.014	0.07	1.6	0.006
272957	MMI	384627	5348637	AGD66	-1850	2000	1400	6.50	2410	1.7	86	0.009	0.11	1.1	0.009
272958	MMI	386046	5347602	AGD66	-200	1800	3000	0.88	680	1.9	41	0.062	0.04	2.0	0.027
272959	MMI	386000	5347630	AGD66	-250	1800	6700	0.46	3280	1.8	35	0.058	0.02	1.6	0.027
272960	MMI	385954	5347657	AGD66	-300	1800	4400	5.30	1010	2.7	330	0.003	0.03	0.8	0.036
272961	MMI	385909	5347684	AGD66	-350	1800	10000	11.00	1100	2.9	394	0.038	2.60	1.2	0.105
272962	MMI	385863	5347712	AGD66	-400	1800	6100	14.00	1650	3.5	481	0.033	0.90	0.2	0.073
272963	MMI	385817	5347739	AGD66	-450	1800	4500	2.00	1020	3.2	58	0.049	0.03	1.4	0.05
272964	MMI	385772	5347767	AGD66	-500	1800	4200	2.20	1730	4.5	39	0.042	0.02	1.0	0.031
272965	MMI	385726	5347794	AGD66	-550	1800	3300	1.10	560	11.0	49	0.196	0.03	2.1	0.015
272966	MMI	385695	5347816	AGD66	-600	1800	18000	0.22	920	4.1	96	0.238	0.03	8.4	0.032
272967	MMI	385651	5347843	AGD66	-650	1800	16000	1.20	840	2.9	79	0.067	0.04	3.3	0.032
272968	MMI	385607	5347870	AGD66	-700	1800	18000	12.50	3110	2.9	308	0.014	0.08	2.5	0.089
272969	MMI	385564	5347896	AGD66	-750	1800	7200	25.50	3860	3.3	325	0.004	0.05	1.2	0.084
272970	MMI	385520	5347923	AGD66	-800	1800	7200	10.50	11000	4.3	481	0.014	0.62	0.8	0.057
272971	MMI	385477	5347950	AGD66	-850	1800	11000	9.90	12000	2.9	376	0.004	0.22	0.6	0.081
272972	MMI	385431	5347974	AGD66	-900	1800	5400	21.50	2830	7.0	366	0.755	0.84	1.9	0.078
272973	MMI	385397	5347997	AGD66	-950	1800	100	17.00	1980	7.0	668	0.008	1.20	0.1	0.069
272974	MMI	385363	5348019	AGD66	-1000	1800	7800	11.50	4980	13.0	333	0.699	1.60	52.0	0.03
272975	MMI	384582	5348654	AGD66	-1900	2000	2800	2.50	2050	2.5	90	0.076	0.77	1.8	0.035
272976	MMI	384537	5348672	AGD66	-1950	2000	1400	4.50	1660	2.1	153	0.053	0.35	2.0	0.093
272977	MMI	384492	5348690	AGD66	-2000	2000	4600	0.79	970	4.1	42	0.067	0.02	1.4	0.013
272978	MMI	384447	5348707	AGD66	-2050	2000	2200	0.37	710	2.4	30	0.046	0.02	1.8	0.014
272979	MMI	384403	5348725	AGD66	-2100	2000	-50	0.73	850	2.2	16	0.098	0.04	1.1	0.019
272980	MMI	384358	5348743	AGD66	-2150	2000	-50	0.31	360	2.0	10	0.097	0.03	1.2	0.009
272981	MMI	384313	5348761	AGD66	-2200	2000	-50	0.14	320	0.9	6	0.047	0.01	1.4	0.002
272982	MMI	384268	5348778	AGD66	-2250	2000	-50	0.16	270	1.1	11	0.131	0.02	1.2	0.008
272983	MMI	385124	5348179	AGD66	-1350	1800	11000	4.80	1480	1.9	380	0.013	0.02	4.4	0.026
272984	MMI	385160	5348156	AGD66	-1300	1800	34000	1.10	1550	5.3	265	0.196	0.04	13.0	0.031
272985	MMI	385194	5348133	AGD66	-1250	1800	14000	0.76	820	3.2	74	0.501	0.06	39.5	0.012
272986	MMI	385228	5348110	AGD66	-1200	1800	20000	0.30	1090	4.6	67	0.353	0.05	49.0	0.003
272987	MMI	385262	5348087	AGD66	-1150	1800	26000	0.81	2480	3.0	56	0.105	0.03	20.0	0.031
272988	MMI	385295	5348065	AGD66	-1100	1800	18000	14.50	1320	20.5	443	0.753	1.90	89.5	0.027
272989	MMI	385329	5348042	AGD66	-1050	1800	15000	4.50	1590	3.7	176	0.066	0.14	65.0	0.005
272990	MMI	386058	5347142	AGD66	100	1400	19000	6.50	1000	31.0	160	0.082	9.00	61.5	0.063
272991	MMI	386016	5347167	AGD66	50	1400	35000	8.70	1480	9.0	222	0.024	1.10	12.5	0.039

Appendix 2

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
272992	MMI	385975	5347193	AGD66	0	1400	23000	4.50	450	9.1	136	0.083	3.80	8.0	0.045
272993	MMI	385933	5347218	AGD66	-50	1400	48000	5.30	1470	5.0	192	0.047	0.09	12.5	0.047
272994	MMI	385892	5347243	AGD66	-100	1400	34000	0.54	720	5.0	0	0.051	0.17	5.8	0.034
272995	MMI	385850	5347268	AGD66	-150	1400	58000	2.30	960	4.9	112	0.043	0.36	8.3	0.043
272996	MMI	385809	5347293	AGD66	-200	1400	53000	4.00	1030	4.8	189	0.064	0.74	7.1	0.035
272997	MMI	385767	5347319	AGD66	-250	1400	24000	3.00	1390	4.1	181	0.037	0.03	3.8	0.035
272998	MMI	385726	5347344	AGD66	-300	1400	13000	0.40	730	4.0	0	0.034	0.06	2.8	0.024
272999	MMI	385684	5347369	AGD66	-350	1400	7300	16.00	1410	6.7	344	0.024	0.03	0.8	0.036
273000	MMI	385643	5347394	AGD66	-400	1400	13000	1.80	1060	3.8	30	0.030	0.02	3.2	0.02
273001	MMI	385601	5347419	AGD66	-450	1400	8000	10.50	2120	8.6	423	0.017	0.04	0.5	0.031
273002	MMI	385560	5347444	AGD66	-500	1400	1500	6.10	1560	4.1	143	0.013	0.02	0.9	0.028
273003	MMI	385518	5347470	AGD66	-550	1400	2600	7.70	740	4.8	198	0.027	0.03	1.9	0.04
273004	MMI	385477	5347495	AGD66	-600	1400	24000	9.90	2460	21.0	288	0.921	0.52	52.0	0.118
273005	MMI	385435	5347520	AGD66	-650	1400	32000	11.50	2010	11.5	215	0.083	1.20	12.5	0.049
273006	MMI	385394	5347545	AGD66	-700	1400	18000	3.80	2820	8.8	92	0.237	0.84	2.5	0.032
273007	MMI	385346	5347569	AGD66	-750	1400	14000	5.80	10000	23.0	205	0.894	0.91	11.0	0.059
273008	MMI	385301	5347607	AGD66	-800	1400	4000	11.00	1190	9.5	189	0.045	0.39	0.4	0.056
273009	MMI	385246	5347641	AGD66	-850	1400	400	7.50	880	7.3	175	0.044	0.05	1.5	0.047
273010	MMI	385191	5347675	AGD66	-900	1400	1100	4.20	1830	8.5	200	0.090	0.03	2.5	0.048
273011	MMI	385147	5347703	AGD66	-950	1400	17000	0.92	510	5.0	11	0.098	0.02	7.1	0.025
273012	MMI	385106	5347728	AGD66	-1000	1400	16000	1.90	1140	5.5	110	0.087	0.03	7.5	0.044
273013	MMI	385066	5347753	AGD66	-1050	1400	18000	4.10	1270	5.1	100	0.114	0.03	10.5	0.04
273014	MMI	385025	5347778	AGD66	-1100	1400	20000	3.60	770	5.8	145	0.048	0.04	6.6	0.046
273015	MMI	384985	5347803	AGD66	-1150	1400	7400	11.50	740	10.5	313	0.030	0.13	0.3	0.059
273016	MMI	384944	5347828	AGD66	-1200	1400	13000	8.80	600	14.5	173	0.252	1.60	24.5	0.047
273017	MMI	384904	5347853	AGD66	-1250	1400	14000	1.00	630	3.5	10	0.088	0.03	9.3	0.019
273018	MMI	384863	5347878	AGD66	-1300	1400	18000	0.64	180	3.1	15	0.105	0.04	18.0	0.024
273019	MMI	384823	5347903	AGD66	-1350	1400	10000	5.30	360	4.7	133	0.081	0.03	2.4	0.043
273020	MMI	384782	5347928	AGD66	-1400	1400	8200	7.10	640	3.3	165	0.039	0.02	4.2	0.034
273021	MMI	384742	5347953	AGD66	-1450	1400	3200	5.10	770	6.4	250	0.063	0.11	1.3	0.048
273022	MMI	384701	5347978	AGD66	-1500	1400	1200	9.00	220	3.6	248	0.043	0.05	1.2	0.045
273023	MMI	384661	5348003	AGD66	-1550	1400	1100	3.70	30	2.3	43	0.074	0.02	2.8	0.027
273024	MMI	384620	5348028	AGD66	-1600	1400	5700	3.00	590	3.3	45	0.117	0.04	6.6	0.02
273025	MMI	384580	5348053	AGD66	-1650	1400	4900	2.20	-10	1.8	0	0.045	0.02	3.2	0.01
273026	MMI	384539	5348078	AGD66	-1700	1400	4000	0.20	190	3.1	0	0.099	0.04	6.0	0.002
273027	MMI	384499	5348103	AGD66	-1750	1400	10000	0.85	1030	2.8	7	0.105	0.04	8.6	0.012
273028	MMI	384458	5348128	AGD66	-1800	1400	20000	1.70	580	4.0	103	0.068	0.04	15.5	0.04
273029	MMI	384418	5348154	AGD66	-1850	1400	8900	2.10	20	4.3	19	0.054	0.03	5.2	0.017
273030	MMI	384377	5348179	AGD66	-1900	1400	12000	1.00	350	3.0	4	0.045	0.05	7.9	0.019
273031	MMI	384337	5348204	AGD66	-1950	1400	16000	1.20	130	3.4	0	0.145	0.03	4.8	0.011
273032	MMI	384296	5348229	AGD66	-2000	1400	43000	1.40	1290	2.1	307	0.168	0.03	20.5	0.044
273033	MMI	384256	5348254	AGD66	-2050	1400	15000	1.70	430	3.3	5	0.072	0.02	5.3	0.016
273034	MMI	384215	5348279	AGD66	-2100	1400	9500	14.50	620	3.9	200	0.039	0.05	1.6	0.096

6.45273

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273035	MMI	384175	5348304	AGD66	-2150	1400	14000	0.25	470	3.4	0	0.208	0.06	8.0	0.037
273036	MMI	384134	5348329	AGD66	-2200	1400	30000	0.31	570	2.8	4	0.133	0.06	15.0	0.028
273037	MMI	384094	5348354	AGD66	-2250	1400	50	0.29	550	1.8	7	0.074	0.02	0.3	0.008
273038	MMI	385247	5346043	AGD66	0	0	3500	0.30	1300	0.1	0	0.031	0.12	57.5	-0.001
273039	MMI	385204	5346069	AGD66	-50	0	7500	0.36	100	0.2	2	0.084	0.10	67.5	-0.001
273040	MMI	385161	5346094	AGD66	-100	0	9100	0.29	-10	0.0	0	0.139	0.05	46.5	-0.001
273041	MMI	385118	5346120	AGD66	-150	0	10000	0.22	620	1.5	6	0.066	0.05	84.0	-0.001
273042	MMI	385075	5346145	AGD66	-200	0	8400	0.20	400	0.9	1	0.054	0.02	5.9	-0.001
273043	MMI	385032	5346171	AGD66	-250	0	4500	0.15	1270	1.0	5	0.034	0.01	1.8	0.013
273044	MMI	384989	5346196	AGD66	-300	0	2200	0.23	200	1.0	2	0.059	0.02	0.6	0.016
273045	MMI	384946	5346221	AGD66	-350	0	3100	0.12	-10	1.3	0	0.015	0.07	18.0	-0.001
273046	MMI	384903	5346247	AGD66	-400	0	5800	0.19	-10	2.9	0	0.116	0.06	23.0	0.002
273047	MMI	384860	5346272	AGD66	-450	0	22000	0.55	380	1.0	15	0.293	0.15	81.5	-0.001
273048	MMI	384818	5346298	AGD66	-500	0	7200	0.15	630	1.5	0	0.074	0.05	18.5	-0.001
273049	MMI	384775	5346323	AGD66	-550	0	8700	0.22	2620	38.0	5	0.091	0.03	12.5	0.023
273050	MMI	384732	5346349	AGD66	-600	0	6900	0.24	190	21.0	10	0.079	0.07	67.0	-0.001
273051	MMI	384689	5346374	AGD66	-650	0	12000	0.31	380	0.4	5	0.115	0.09	54.0	-0.001
273052	MMI	384646	5346400	AGD66	-700	0	15000	0.29	1880	4.8	11	0.180	0.05	19.0	0.009
273053	MMI	384603	5346425	AGD66	-750	0	14000	0.26	480	6.2	13	0.065	0.05	37.5	0.013
273054	MMI	384560	5346451	AGD66	-800	0	7200	0.23	1630	4.6	11	0.045	0.03	0.8	0.011
273055	MMI	384522	5346476	AGD66	-850	0	4700	1.80	-10	4.7	57	0.003	0.05	0.3	0.01
273056	MMI	384483	5346501	AGD66	-900	0	2000	2.50	-10	3.0	70	0.001	0.01	0.3	0.02
273057	MMI	384445	5346526	AGD66	-950	0	-50	1.10	-10	4.7	37	0.002	0.05	0.0	0.013
273058	MMI	384407	5346552	AGD66	-1000	0	150	4.20	-10	4.7	118	0.002	0.03	0.1	0.022
273059	MMI	384369	5346577	AGD66	-1050	0	1000	0.67	120	3.8	56	0.002	0.01	0.3	0.017
273061	MMI	384330	5346602	AGD66	-1100	0	-50	0.10	30	2.1	10	0.043	0.02	0.9	0.016
273062	MMI	384292	5346627	AGD66	-1150	0	7000	0.17	280	5.3	5	0.077	0.04	27.5	-0.001
273063	MMI	384251	5346646	AGD66	-1200	0	11000	0.19	-10	3.0	4	0.074	0.06	89.5	-0.001
273064	MMI	384208	5346659	AGD66	-1250	0	5700	0.22	-10	1.9	3	0.014	0.02	0.8	0.009
273065	MMI	384165	5346672	AGD66	-1300	0	1300	0.19	860	2.4	16	0.046	0.02	0.9	0.022
273066	MMI	384122	5346685	AGD66	-1350	0	1100	0.13	1010	2.8	12	0.081	0.03	1.0	0.024
273067	MMI	384079	5346698	AGD66	-1400	0	6100	0.22	1030	5.6	18	0.126	0.02	29.0	0.024
273068	MMI	384036	5346711	AGD66	-1450	0	8000	0.18	420	4.0	10	0.085	0.04	8.0	0.015
273069	MMI	383993	5346724	AGD66	-1500	0	2400	0.26	250	1.9	10	0.078	0.02	0.5	0.02
273070	MMI	383950	5346737	AGD66	-1550	0	3500	0.32	730	3.9	13	0.100	0.05	2.0	0.024
273071	MMI	383907	5346750	AGD66	-1600	0	3200	0.33	1340	3.4	14	0.067	0.04	0.8	0.023
273072	MMI	383864	5346763	AGD66	-1650	0	2700	0.17	1260	2.3	14	0.027	0.02	0.5	0.024
273073	MMI	383821	5346776	AGD66	-1700	0	10000	0.20	480	0.5	7	0.185	0.15	91.5	0.004
273074	MMI	383778	5346788	AGD66	-1750	0	17000	0.23	980	3.6	27	0.242	0.06	34.0	0.027
273075	MMI	383734	5346801	AGD66	-1800	0	12000	0.16	600	2.9	6	0.118	0.06	5.6	0.01
273076	MMI	383691	5346814	AGD66	-1850	0	9700	0.16	610	2.0	16	0.101	0.03	5.7	0.03
273077	MMI	383648	5346827	AGD66	-1900	0	5600	0.14	330	1.7	8	0.053	0.03	2.2	0.022
273078	MMI	383605	5346840	AGD66	-1950	0	18000	0.19	1100	3.2	20	0.235	0.05	77.5	0.034

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273079	MMI	383562	5346853	AGD66	-2000	0	28000	0.24	390	0.0	14	0.291	0.11	52.5	0.009
273080	MMI	383798	5347106	AGD66	-1850	200	18000	0.10	890	3.6	20	0.157	0.02	16.5	0.02
273081	MMI	383839	5347084	AGD66	-1800	200	13000	0.15	670	2.9	17	0.141	0.04	4.9	0.036
273082	MMI	383880	5347062	AGD66	-1750	200	7200	0.06	890	0.9	15	0.049	0.02	1.0	0.028
273083	MMI	383922	5347039	AGD66	-1700	200	3300	0.23	720	2.8	19	0.064	0.03	0.8	0.02
273084	MMI	383964	5347015	AGD66	-1650	200	1700	0.16	320	2.8	10	0.033	0.02	0.4	0.019
273085	MMI	384006	5346991	AGD66	-1600	200	1700	0.17	550	3.1	9	0.041	0.02	0.3	0.018
273086	MMI	384048	5346967	AGD66	-1550	200	9000	0.23	1530	10.5	12	0.140	0.05	5.3	0.029
273087	MMI	384091	5346944	AGD66	-1500	200	7400	0.12	680	2.6	5	0.122	0.03	3.5	0.016
273088	MMI	384133	5346920	AGD66	-1450	200	9300	0.25	230	6.4	11	0.106	0.03	12.5	0.012
273089	MMI	384175	5346896	AGD66	-1400	200	7200	1.50	320	3.6	29	0.009	0.02	0.2	0.028
273090	MMI	384217	5346872	AGD66	-1350	200	1700	0.30	400	2.8	13	0.080	0.03	0.5	0.022
273091	MMI	384259	5346848	AGD66	-1300	200	1800	0.74	600	4.0	22	0.051	0.03	0.4	0.019
273092	MMI	384302	5346824	AGD66	-1250	200	2500	1.40	130	2.1	40	0.003	0.06	0.2	0.037
273093	MMI	384342	5346801	AGD66	-1200	200	1200	0.88	910	3.0	18	0.052	0.05	0.4	0.007
273094	MMI	384381	5346778	AGD66	-1150	200	13000	0.14	1330	5.9	12	0.147	0.06	15.0	0.028
273095	MMI	384420	5346754	AGD66	-1100	200	11000	5.60	7500	2.8	93	0.004	0.04	0.3	0.043
273096	MMI	384458	5346731	AGD66	-1050	200	3800	8.30	1550	4.9	149	0.003	0.02	0.3	0.035
273097	MMI	384497	5346708	AGD66	-1000	200	1400	2.50	1130	6.4	138	0.002	0.06	0.2	0.032
273099	MMI	384536	5346685	AGD66	-950	200	850	4.60	1430	4.2	117	0.004	0.03	1.0	0.034
273100	MMI	384575	5346661	AGD66	-900	200	900	3.70	980	3.1	154	0.002	0.03	0.3	0.037
273101	MMI	384618	5346637	AGD66	-850	200	-50	3.70	630	5.7	125	0.002	0.04	0.0	0.027
273102	MMI	384661	5346612	AGD66	-800	200	-50	3.40	740	2.1	120	0.002	0.12	0.2	0.021
273103	MMI	384704	5346587	AGD66	-750	200	-50	0.19	1080	2.4	15	0.057	0.02	0.3	0.011
273104	MMI	384747	5346562	AGD66	-700	200	-50	0.36	190	2.3	7	0.025	0.02	0.2	0.012
273105	MMI	384790	5346537	AGD66	-650	200	300	0.43	610	2.3	22	0.063	0.03	0.4	0.019
273106	MMI	384833	5346513	AGD66	-600	200	-50	0.08	430	0.7	7	0.035	0.01	0.5	0.017
273107	MMI	384876	5346488	AGD66	-550	200	-50	0.20	540	1.8	13	0.107	0.04	0.5	0.018
273108	MMI	384919	5346463	AGD66	-500	200	-50	0.22	600	0.5	5	0.024	0.01	0.2	0.009
273109	MMI	384962	5346438	AGD66	-450	200	-50	0.14	710	1.4	8	0.090	0.03	0.8	0.018
273110	MMI	385005	5346414	AGD66	-400	200	1300	0.17	830	1.6	4	0.058	0.03	2.2	0.014
273111	MMI	385048	5346389	AGD66	-350	200	3700	0.15	910	2.4	5	0.100	0.03	20.0	0.009
273112	MMI	385091	5346364	AGD66	-300	200	14000	0.26	1800	2.2	22	0.210	0.02	116.5	0.013
273113	MMI	385134	5346339	AGD66	-250	200	16000	0.22	1070	3.6	12	0.301	0.06	37.0	0.02
273114	MMI	385177	5346314	AGD66	-200	200	9200	0.19	880	1.7	10	0.167	0.03	6.1	0.028
273115	MMI	385220	5346290	AGD66	-150	200	4300	0.15	2980	1.2	7	0.072	0.03	0.8	0.027
273116	MMI	385263	5346265	AGD66	-100	200	2700	0.14	410	0.6	0	0.008	0.03	5.0	-0.001
273117	MMI	385306	5346240	AGD66	-50	200	8200	0.18	1050	0.8	8	0.061	0.03	36.5	0.001
273118	MMI	385350	5346215	AGD66	0	200	2100	0.29	310	1.8	4	0.103	0.08	24.5	0.002
273119	MMI	385391	5346192	AGD66	50	200	2800	0.22	720	2.1	3	0.052	0.05	23.0	0.001
273120	MMI	385433	5346169	AGD66	100	200	4000	0.20	340	1.0	1	0.034	0.03	13.5	-0.001
273121	MMI	385474	5346145	AGD66	150	200	1400	0.15	1820	1.7	12	0.057	0.02	0.8	0.028
273122	MMI	385516	5346122	AGD66	200	200	500	0.21	230	0.8	1	0.049	0.03	10.5	0.003

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273123	MMI	385559	5346097	AGD66	250	200	4900	0.35	980	0.8	5	0.045	0.06	39.0	0.003
273124	MMI	385602	5346071	AGD66	300	200	1600	0.09	50	1.0	4	0.051	0.01	2.1	0.014
273125	MMI	385644	5346046	AGD66	350	200	5700	4.30	1910	5.2	118	0.010	0.07	0.4	0.044
273126	MMI	385687	5346021	AGD66	400	200	200	0.14	740	1.9	9	0.060	0.02	0.3	0.014
273127	MMI	385161	5347920	AGD66	-1100	1600	7700	3.30	870	3.8	204	0.077	0.03	2.1	0.036
273128	MMI	385121	5347946	AGD66	-1150	1600	1800	8.70	720	6.7	138	0.009	0.05	0.3	0.042
273129	MMI	385081	5347972	AGD66	-1200	1600	3400	4.80	740	3.6	117	0.024	0.20	0.9	0.032
273130	MMI	385040	5347998	AGD66	-1250	1600	1600	5.40	410	3.2	54	0.033	0.02	0.3	0.022
273131	MMI	385000	5348024	AGD66	-1300	1600	2900	0.76	2360	2.4	131	0.064	0.01	4.8	0.027
273132	MMI	384960	5348049	AGD66	-1350	1600	5300	0.48	1480	3.1	102	0.097	0.02	2.3	0.024
273133	MMI	384919	5348075	AGD66	-1400	1600	3100	1.20	1250	1.9	93	0.039	0.02	1.2	0.025
273134	MMI	384879	5348101	AGD66	-1450	1600	2000	0.44	200	1.8	37	0.058	0.02	0.6	0.01
273135	MMI	384839	5348127	AGD66	-1500	1600	3800	3.20	840	2.9	106	0.051	0.04	1.1	0.024
273136	MMI	384798	5348153	AGD66	-1550	1600	4600	0.88	4020	1.8	126	0.021	0.02	1.8	0.037
273137	MMI	384758	5348179	AGD66	-1600	1600	2100	1.40	3160	2.0	131	0.022	0.02	0.8	0.028
273138	MMI	384718	5348205	AGD66	-1650	1600	2900	3.80	1610	2.4	255	0.012	0.03	1.0	0.029
273139	MMI	384678	5348231	AGD66	-1700	1600	3000	8.00	1000	2.9	227	0.008	0.03	0.7	0.037
273140	MMI	384637	5348257	AGD66	-1750	1600	1800	2.40	980	3.6	106	0.021	0.04	0.7	0.03
273141	MMI	384597	5348283	AGD66	-1800	1600	1000	6.80	540	3.2	156	0.002	0.03	0.4	0.037
273142	MMI	384557	5348309	AGD66	-1850	1600	700	3.00	1470	1.6	43	0.012	0.03	0.2	0.019
273143	MMI	384516	5348335	AGD66	-1900	1600	550	2.30	600	3.7	50	0.008	0.03	0.0	0.051
273144	MMI	384476	5348360	AGD66	-1950	1600	100	5.30	760	4.8	149	0.001	0.04	0.1	0.031
273145	MMI	384436	5348386	AGD66	-2000	1600	500	1.50	540	2.0	68	0.014	0.01	0.3	0.019
273146	MMI	384395	5348412	AGD66	-2050	1600	350	4.00	390	3.5	34	0.051	0.02	0.0	0.014
273147	MMI	384355	5348438	AGD66	-2100	1600	900	7.70	370	4.4	121	0.004	0.08	0.1	0.034
273148	MMI	384315	5348464	AGD66	-2150	1600	1400	0.38	560	1.7	17	0.073	0.02	0.2	0.025
273149	MMI	384275	5348490	AGD66	-2200	1600	750	0.65	50	1.0	19	0.046	0.01	0.1	0.006
273150	MMI	384234	5348516	AGD66	-2250	1600	2200	0.57	900	1.3	31	0.059	0.02	0.5	0.018
273151	MMI	384194	5348542	AGD66	-2300	1600	1100	0.25	-10	1.6	14	0.200	0.02	0.4	0.006
273152	MMI	384154	5348568	AGD66	-2350	1600	3100	0.62	10	0.5	4	0.177	0.09	3.5	-0.001
273153	MMI	384113	5348594	AGD66	-2400	1600	2700	0.22	330	1.3	4	0.128	0.02	5.1	0.004
273154	MMI	384440	5348596	AGD66	-2250	1800	5500	6.90	390	2.7	115	0.009	0.07	0.2	0.03
273155	MMI	384406	5348612	AGD66	-2200	1800	1600	2.10	340	3.4	54	0.024	0.03	0.2	0.031
273156	MMI	384516	5348549	AGD66	-2150	1800	1700	5.00	1250	2.8	86	0.003	0.03	0.0	0.014
273157	MMI	384554	5348526	AGD66	-2100	1800	1300	2.80	2370	2.4	53	0.091	0.03	0.1	0.004
273158	MMI	384592	5348503	AGD66	-2050	1800	1900	2.30	1470	3.0	17	0.046	0.12	0.1	0.009
273159	MMI	384630	5348480	AGD66	-2000	1800	900	6.10	830	2.5	33	0.002	0.05	0.0	0.001
273160	MMI	384668	5348457	AGD66	-1950	1800	350	5.40	3990	1.3	59	0.002	0.03	0.0	0.014
273161	MMI	384706	5348433	AGD66	-1900	1800	-50	5.00	350	4.1	93	0.002	0.04	0.1	0.032
273162	MMI	384744	5348410	AGD66	-1850	1800	-50	4.00	-10	3.5	151	0.005	0.05	0.1	0.019
273163	MMI	384782	5348387	AGD66	-1800	1800	450	0.97	540	2.8	80	0.075	0.03	0.6	0.002
273164	MMI	384820	5348364	AGD66	-1750	1800	650	2.40	-10	1.0	48	0.026	0.01	0.1	0.003
273165	MMI	384858	5348341	AGD66	-1700	1800	700	7.70	260	1.9	111	0.006	0.03	0.2	0.005

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273166	MMI	384896	5348318	AGD66	-1650	1800	250	2.30	680	4.1	164	0.032	0.75	0.3	0.008
273167	MMI	384934	5348294	AGD66	-1600	1800	850	4.50	160	1.4	304	0.006	0.02	0.5	0.013
273168	MMI	384972	5348271	AGD66	-1550	1800	50	3.40	740	1.5	221	0.004	0.01	0.3	0.006
273169	MMI	385010	5348248	AGD66	-1500	1800	-50	5.90	-10	1.8	139	0.016	0.28	0.2	0.018
273170	MMI	385048	5348225	AGD66	-1450	1800	-50	10.00	610	3.9	498	0.013	0.07	0.2	0.014
273171	MMI	385086	5348202	AGD66	-1400	1800	250	1.80	130	2.2	118	0.042	0.05	0.5	0.007
273174	MMI	385959	5346094	AGD66	600	400	1500	0.23	-10	2.2	12	0.065	0.02	15.0	0.004
273175	MMI	385916	5346119	AGD66	550	400	850	0.08	-10	0.9	0	0.029	0.01	2.6	-0.001
273176	MMI	385874	5346143	AGD66	500	400	950	0.09	340	1.6	5	0.026	0.01	0.6	0.003
273177	MMI	385831	5346168	AGD66	450	400	700	0.12	280	0.9	2	0.043	0.02	0.3	0.003
273178	MMI	385789	5346193	AGD66	400	400	8800	0.30	1050	1.9	5	0.183	0.09	23.5	0.003
273179	MMI	385746	5346218	AGD66	350	400	2900	0.25	-10	1.0	3	0.062	0.02	0.3	-0.001
273180	MMI	385704	5346242	AGD66	300	400	7300	0.13	350	1.7	10	0.057	0.01	16.5	0.006
273181	MMI	385661	5346265	AGD66	250	400	5800	2.80	90	3.3	62	0.053	0.03	0.2	0.01
273182	MMI	385619	5346288	AGD66	200	400	6800	4.90	-10	4.0	153	0.005	0.02	0.3	0.028
273183	MMI	385577	5346311	AGD66	150	400	-50	0.21	970	0.8	4	0.070	0.02	0.2	-0.001
273184	MMI	385534	5346334	AGD66	100	400	2200	0.12	860	2.1	3	0.051	0.02	6.8	0.003
273185	MMI	385492	5346357	AGD66	50	400	4000	0.21	-10	4.2	2	0.077	0.02	2.2	0.003
273186	MMI	385450	5346380	AGD66	0	400	1100	0.17	910	1.1	19	0.040	0.03	1.5	0.023
273187	MMI	385410	5346406	AGD66	-50	400	750	0.08	120	0.9	12	0.034	0.01	1.6	0.011
273188	MMI	385371	5346432	AGD66	-100	400	3600	0.23	670	3.5	26	0.147	0.03	24.5	0.016
273189	MMI	385332	5346458	AGD66	-150	400	2600	0.21	220	1.9	20	0.066	0.03	1.3	0.021
273190	MMI	385293	5346484	AGD66	-200	400	3800	0.26	700	1.4	13	0.092	0.02	18.5	0.016
273191	MMI	385253	5346510	AGD66	-250	400	14000	0.20	580	3.3	40	0.160	0.01	26.5	0.019
273192	MMI	385214	5346536	AGD66	-300	400	6300	0.15	-10	0.5	7	0.025	0.01	0.6	0.008
273193	MMI	385175	5346562	AGD66	-350	400	2100	0.12	-10	1.1	7	0.032	0.01	0.6	0.013
273194	MMI	385136	5346587	AGD66	-400	400	2000	0.12	-10	2.0	34	0.143	0.03	2.6	0.021
273195	MMI	385096	5346613	AGD66	-450	400	500	0.18	-10	1.2	9	0.053	0.03	0.7	0.015
273196	MMI	385057	5346639	AGD66	-500	400	-50	0.29	-10	0.9	13	0.040	0.02	0.5	0.009
273197	MMI	385018	5346665	AGD66	-550	400	-50	0.23	-10	1.0	15	0.022	0.01	1.0	0.012
273198	MMI	384979	5346691	AGD66	-600	400	-50	0.12	2290	1.2	7	0.045	0.02	1.0	0.011
273199	MMI	384939	5346717	AGD66	-650	400	-50	1.60	570	1.0	37	0.013	0.01	0.5	0.02
273200	MMI	384900	5346743	AGD66	-700	400	3800	5.90	1240	6.2	179	0.124	2.10	2.8	0.043
273201	MMI	384861	5346769	AGD66	-750	400	1600	1.10	180	4.4	62	0.046	0.04	1.2	0.018
273202	MMI	384822	5346795	AGD66	-800	400	2200	2.30	1180	5.4	152	0.018	0.05	1.0	0.018
273203	MMI	384782	5346821	AGD66	-850	400	950	3.20	200	4.8	213	0.040	0.54	0.6	0.021
273204	MMI	384743	5346846	AGD66	-900	400	500	7.10	430	4.9	347	0.036	0.83	0.5	0.04
273205	MMI	384704	5346872	AGD66	-950	400	500	8.20	810	5.7	191	0.002	1.40	0.1	0.022
273206	MMI	384663	5346896	AGD66	-1000	400	-50	1.60	-10	11.5	79	0.003	1.00	0.1	0.018
273207	MMI	384663	5346896	AGD66	-1000	400	-50	1.60	-10	12.5	84	0.002	1.10	0.3	0.018
273208	MMI	384621	5346917	AGD66	-1050	400	-50	7.60	770	6.0	301	0.002	0.09	0.1	0.018
273209	MMI	384578	5346938	AGD66	-1100	400	-50	4.70	-10	5.0	218	-0.001	0.04	0.1	0.017
273210	MMI	384536	5346959	AGD66	-1150	400	450	7.40	470	3.6	265	0.005	1.50	0.5	0.026

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273211	MMI	384493	5346980	AGD66	-1200	400	-50	2.90	-10	2.1	149	0.001	0.04	2.4	0.024
273212	MMI	384450	5347001	AGD66	-1250	400	13000	1.80	60	1.7	73	0.112	0.04	75.0	0.015
273213	MMI	384408	5347022	AGD66	-1300	400	8600	10.00	710	3.7	376	0.056	0.35	15.0	0.025
273214	MMI	384365	5347043	AGD66	-1350	400	1000	5.30	730	10.5	159	0.009	0.07	0.0	0.017
273215	MMI	384323	5347064	AGD66	-1400	400	850	3.60	1030	6.8	291	0.007	0.53	0.0	0.021
273216	MMI	384280	5347085	AGD66	-1450	400	850	1.80	920	4.4	199	0.002	0.09	0.3	0.015
273217	MMI	384238	5347106	AGD66	-1500	400	50	5.40	1210	5.2	263	0.001	0.04	1.0	0.018
273218	MMI	384195	5347127	AGD66	-1550	400	500	5.50	1120	5.7	271	0.003	0.09	0.2	0.028
273219	MMI	384153	5347148	AGD66	-1600	400	150	4.30	1130	6.5	279	0.003	0.11	0.0	0.029
273220	MMI	384110	5347169	AGD66	-1650	400	2600	5.60	1620	4.8	378	0.005	0.06	1.1	0.054
273221	MMI	384068	5347190	AGD66	-1700	400	6500	0.22	1850	3.2	85	0.135	0.02	14.5	0.027
273222	MMI	384025	5347211	AGD66	-1750	400	4100	0.24	720	2.4	38	0.042	0.02	0.9	0.022
273223	MMI	383983	5347232	AGD66	-1800	400	3300	0.25	880	2.0	42	0.061	0.03	1.0	0.021
273224	MMI	383940	5347253	AGD66	-1850	400	2600	0.94	800	3.3	56	0.028	0.02	0.7	0.024
273225	MMI	383898	5347274	AGD66	-1900	400	6800	1.60	980	3.8	44	0.076	0.05	44.0	-0.001
273226	MMI	383855	5347296	AGD66	-1950	400	3700	0.78	800	4.7	25	0.033	0.02	0.4	0.019
273227	MMI	383813	5347317	AGD66	-2000	400	3400	0.24	550	4.6	23	0.066	0.02	1.4	0.022
273228	MMI	383770	5347338	AGD66	-2050	400	6300	0.21	1020	3.2	34	0.144	0.02	18.0	0.028
273229	MMI	383728	5347359	AGD66	-2100	400	9600	0.28	950	3.7	39	0.210	0.02	28.5	0.02
273230	MMI	385202	5347894	AGD66	-1050	1600	13000	5.10	860	6.9	251	0.020	0.05	0.9	0.03
273231	MMI	385245	5347869	AGD66	-1000	1600	9600	0.18	870	3.5	48	0.179	0.01	44.5	0.015
273232	MMI	385287	5347843	AGD66	-950	1600	19000	0.49	760	3.6	35	0.025	0.10	24.5	0.008
273233	MMI	385330	5347818	AGD66	-900	1600	14000	7.40	1450	9.1	405	0.103	2.80	0.4	0.065
273234	MMI	385372	5347792	AGD66	-850	1600	8500	22.00	2630	31.5	471	1.400	3.40	0.1	0.063
273235	MMI	385414	5347767	AGD66	-800	1600	2100	23.50	6870	6.1	675	0.009	1.10	0.0	0.059
273236	MMI	385444	5347741	AGD66	-750	1600	7400	4.50	20000	8.2	83	0.276	0.89	1.9	0.085
273237	MMI	385487	5347714	AGD66	-700	1600	11000	11.00	3780	23.0	547	0.345	3.70	4.1	0.06
273238	MMI	385529	5347688	AGD66	-650	1600	12000	0.57	590	2.6	63	0.028	0.02	0.6	0.019
273239	MMI	385572	5347662	AGD66	-600	1600	13000	1.00	3630	3.5	91	0.041	0.02	1.3	0.025
273240	MMI	385614	5347635	AGD66	-550	1600	7400	8.90	4360	2.1	57	0.025	0.02	0.1	0.043
273241	MMI	385657	5347609	AGD66	-500	1600	18000	2.70	28000	1.3	53	0.028	0.02	0.2	0.033
273242	MMI	385700	5347583	AGD66	-450	1600	-50	0.37	6400	1.9	42	0.037	0.02	0.1	0.019
273243	MMI	385742	5347556	AGD66	-400	1600	35000	80.50	22000	3.0	311	0.050	0.66	0.0	0.104
273244	MMI	385785	5347530	AGD66	-350	1600	11000	15.00	3280	5.6	390	0.328	15.00	23.5	0.05
273245	MMI	385827	5347504	AGD66	-300	1600	1900	13.00	3250	5.2	228	0.036	0.22	0.1	0.068
273246	MMI	385870	5347477	AGD66	-250	1600	2700	0.28	880	2.1	41	0.129	0.01	11.0	0.03
273247	MMI	385912	5347451	AGD66	-200	1600	1400	0.31	950	3.3	37	0.053	0.02	0.1	0.029
273248	MMI	385955	5347425	AGD66	-150	1600	74000	0.34	1790	31.0	42	0.446	0.07	37.5	0.014
273249	MMI	385997	5347398	AGD66	-100	1600	16000	2.00	1770	7.7	264	0.008	0.09	0.3	0.066
273250	MMI	386040	5347372	AGD66	-50	1600	-50	5.00	4600	21.0	309	0.003	0.78	0.0	0.018
273251	MMI	386083	5347346	AGD66	0	1600	-50	11.50	1510	42.5	349	0.044	0.34	2.1	0.034
273252	MMI	386013	5346301	AGD66	550	600	-50	2.40	360	1.8	49	0.022	0.02	0.0	0.011
273253	MMI	385970	5346323	AGD66	500	600	-50	0.29	1210	1.6	10	0.042	0.02	0.0	0.012

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273254	MMI	385927	5346345	AGD66	450	600	-50	0.16	700	1.7	0	0.050	0.02	6.0	0.021
273255	MMI	385884	5346368	AGD66	400	600	400	0.19	560	1.3	5	0.077	0.03	3.3	0.016
273256	MMI	385841	5346390	AGD66	350	600	6200	0.12	1120	1.2	24	0.070	0.01	13.5	0.02
273257	MMI	385798	5346413	AGD66	300	600	1200	0.09	540	1.2	9	0.044	0.01	0.1	0.013
273258	MMI	385755	5346435	AGD66	250	600	-50	0.10	350	1.3	7	0.017	0.01	0.1	0.01
273259	MMI	385714	5346459	AGD66	200	600	-50	0.18	770	2.0	11	0.050	0.02	0.0	0.014
273260	MMI	385674	5346483	AGD66	150	600	-50	0.66	1200	2.1	25	0.031	0.02	0.2	0.011
273261	MMI	385633	5346506	AGD66	100	600	-50	0.85	640	1.0	51	0.017	0.01	0.0	0.016
273262	MMI	385592	5346530	AGD66	50	600	-50	0.70	900	2.0	35	0.023	0.02	0.0	0.017
273263	MMI	385551	5346554	AGD66	0	600	-50	0.17	620	1.2	7	0.048	0.01	0.0	0.011
273264	MMI	385511	5346581	AGD66	-50	600	-50	0.18	670	1.3	6	0.028	0.01	0.0	0.011
273265	MMI	385471	5346609	AGD66	-100	600	-50	0.16	710	0.9	2	0.036	0.01	0.0	0.013
273266	MMI	385431	5346637	AGD66	-150	600	-50	0.17	1990	0.7	6	0.048	0.02	0.1	0.015
273267	MMI	385391	5346664	AGD66	-200	600	-50	0.24	530	0.7	0	0.030	0.02	0.0	0.008
273268	MMI	385351	5346692	AGD66	-250	600	-50	0.15	710	0.4	1	0.023	0.01	0.0	0.012
273269	MMI	385311	5346720	AGD66	-300	600	-50	0.22	930	2.1	10	0.078	0.02	6.2	0.021
273270	MMI	385271	5346747	AGD66	-350	600	-50	0.12	1130	1.0	8	0.022	0.02	0.2	0.013
273271	MMI	385231	5346775	AGD66	-400	600	-50	0.16	430	0.4	3	0.013	0.01	0.1	0.007
273272	MMI	385191	5346803	AGD66	-450	600	-50	0.13	210	0.4	2	0.021	0.01	0.2	0.011
273273	MMI	385151	5346830	AGD66	-500	600	-50	0.23	4140	0.6	8	0.016	0.01	0.1	0.009
273274	MMI	385111	5346858	AGD66	-550	600	-50	0.26	310	0.4	6	0.012	0.01	0.1	0.005
273275	MMI	385071	5346886	AGD66	-600	600	-50	0.22	840	0.4	5	0.011	0.01	0.3	0.006
273276	MMI	385031	5346913	AGD66	-650	600	-50	0.17	440	0.8	4	0.041	0.02	0.2	0.009
273277	MMI	384991	5346941	AGD66	-700	600	1400	4.00	1740	3.7	141	0.034	0.16	0.4	0.035
273278	MMI	384951	5346969	AGD66	-750	600	-50	1.40	120	1.9	52	0.005	0.02	0.1	0.013
273279	MMI	384911	5346996	AGD66	-800	600	-50	3.20	310	2.6	30	0.004	0.03	0.0	0.017
273280	MMI	384871	5347024	AGD66	-850	600	-50	0.45	-10	1.9	10	0.011	0.01	0.1	0.01
273281	MMI	384831	5347052	AGD66	-900	600	-50	0.40	20	2.5	4	0.028	0.02	0.2	0.006
273282	MMI	384791	5347079	AGD66	-950	600	-50	0.31	40	1.9	11	0.033	0.02	0.2	0.008
273283	MMI	384751	5347107	AGD66	-1000	600	-50	0.43	20	2.1	10	0.045	0.04	0.1	0.006
273284	MMI	384710	5347133	AGD66	-1050	600	-50	0.66	370	1.2	13	0.051	0.03	0.3	0.017
273285	MMI	384668	5347159	AGD66	-1100	600	250	3.10	260	1.9	83	-0.001	0.02	0.2	0.02
273286	MMI	384627	5347186	AGD66	-1150	600	-50	3.50	600	2.3	153	0.003	0.11	0.0	0.021
273287	MMI	384586	5347212	AGD66	-1200	600	-50	0.99	130	1.9	34	0.002	0.03	0.1	0.048
273288	MMI	384545	5347238	AGD66	-1250	600	-50	0.63	590	2.5	4	0.029	0.03	1.0	0.015
273289	MMI	384504	5347264	AGD66	-1300	600	1400	8.00	1160	6.3	187	0.156	0.22	16.0	0.054
273290	MMI	384463	5347290	AGD66	-1350	600	3900	2.40	-10	12.0	38	0.046	0.10	9.6	0.001
273291	MMI	384421	5347317	AGD66	-1400	600	-50	1.80	790	5.2	51	0.061	0.06	0.3	0.025
273292	MMI	384380	5347343	AGD66	-1450	600	50	6.30	260	6.8	199	0.001	0.09	0.1	0.043
273293	MMI	384339	5347369	AGD66	-1500	600	6100	4.50	-10	7.8	125	0.124	0.78	2.1	0.042
273294	MMI	384298	5347395	AGD66	-1550	600	1500	3.70	460	7.1	157	0.003	0.09	0.2	0.034
273295	MMI	384257	5347421	AGD66	-1600	600	550	4.70	-10	3.4	152	0.002	0.02	0.3	0.037
273296	MMI	384216	5347448	AGD66	-1650	600	-50	2.30	290	7.2	58	0.092	0.07	0.4	0.022

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273297	MMI	384174	5347474	AGD66	-1700	600	3200	0.44	-10	3.4	33	0.059	0.03	0.3	0.019
273298	MMI	384133	5347500	AGD66	-1750	600	13000	0.61	1020	2.7	73	0.159	0.05	9.4	0.03
273299	MMI	384092	5347526	AGD66	-1800	600	9100	2.50	780	2.8	31	0.052	0.03	2.3	0.055
273300	MMI	384051	5347552	AGD66	-1850	600	6100	1.20	520	2.5	28	0.058	0.04	2.0	0.03
273301	MMI	384010	5347579	AGD66	-1900	600	12000	0.26	400	2.0	9	0.033	0.02	1.2	0.019
273302	MMI	383918	5347774	AGD66	-2100	800	14000	0.40	540	0.2	12	0.082	0.15	31.0	-0.001
273303	MMI	383959	5347749	AGD66	-2050	800	19000	0.38	390	0.1	9	0.085	0.15	34.0	-0.001
273304	MMI	383999	5347723	AGD66	-2000	800	19000	0.39	470	1.9	26	0.092	0.03	10.5	0.016
273305	MMI	384040	5347698	AGD66	-1950	800	12000	0.48	630	1.6	28	0.070	0.05	1.4	0.024
273306	MMI	384080	5347673	AGD66	-1900	800	6500	0.74	380	1.7	27	0.040	0.03	0.9	0.046
273307	MMI	384121	5347647	AGD66	-1850	800	15000	0.36	960	2.3	23	0.093	0.06	26.0	0.001
273308	MMI	384162	5347622	AGD66	-1800	800	8700	0.27	3160	2.2	18	0.044	0.02	1.3	0.013
273309	MMI	384202	5347596	AGD66	-1750	800	14000	0.39	540	1.9	52	0.130	0.05	14.0	0.025
273310	MMI	384243	5347571	AGD66	-1700	800	35000	0.23	1400	3.3	38	0.214	0.05	28.5	0.021
273311	MMI	384284	5347546	AGD66	-1650	800	11000	0.53	-10	3.4	20	0.042	0.02	1.3	0.025
273312	MMI	384324	5347520	AGD66	-1600	800	22000	0.28	830	2.6	34	0.099	0.03	7.7	0.021
273313	MMI	384365	5347495	AGD66	-1550	800	19000	0.30	1130	2.6	35	0.092	0.03	8.3	0.018
273314	MMI	384405	5347470	AGD66	-1500	800	8700	0.25	390	1.5	20	0.045	0.02	1.0	0.013
273315	MMI	384446	5347444	AGD66	-1450	800	8100	0.26	340	1.6	34	0.053	0.03	2.9	0.019
273316	MMI	384487	5347419	AGD66	-1400	800	1900	2.50	1270	2.6	59	0.024	0.02	1.0	0.028
273317	MMI	384527	5347393	AGD66	-1350	800	2400	4.70	540	5.0	112	0.010	0.05	0.7	0.057
273318	MMI	384568	5347368	AGD66	-1300	800	900	10.50	580	4.2	296	0.008	0.10	0.6	0.053
273319	MMI	384609	5347343	AGD66	-1250	800	-50	10.00	1180	3.7	199	0.081	0.94	0.9	0.038
273320	MMI	384649	5347317	AGD66	-1200	800	-50	10.00	920	3.1	335	0.008	0.05	0.6	0.057
273321	MMI	384690	5347292	AGD66	-1150	800	-50	7.60	450	3.5	276	0.008	0.04	0.9	0.058
273322	MMI	384730	5347266	AGD66	-1100	800	-50	19.00	1580	9.3	312	0.050	0.18	2.9	0.024
273323	MMI	384771	5347241	AGD66	-1050	800	9400	1.20	1300	3.1	59	0.179	0.05	15.5	0.016
273324	MMI	384812	5347216	AGD66	-1000	800	5600	0.27	-10	1.8	25	0.019	0.01	1.2	0.012
273325	MMI	384852	5347190	AGD66	-950	800	1400	1.20	-10	3.0	27	0.022	0.02	0.7	0.013
273326	MMI	384893	5347165	AGD66	-900	800	2200	3.30	380	3.5	51	0.002	0.01	0.1	0.024
273327	MMI	384933	5347139	AGD66	-850	800	1600	0.44	1870	1.3	29	0.020	0.01	0.5	0.014
273328	MMI	384974	5347114	AGD66	-800	800	2200	0.56	540	6.1	18	0.033	0.02	0.3	0.017
273329	MMI	385017	5347089	AGD66	-750	800	3000	4.40	770	4.5	108	0.001	0.01	0.2	0.029
273330	MMI	385059	5347065	AGD66	-700	800	4100	6.50	2800	3.8	212	0.070	1.10	2.3	0.053
273331	MMI	385101	5347040	AGD66	-650	800	7700	0.31	3240	2.0	18	0.124	0.03	4.0	0.017
273332	MMI	385144	5347015	AGD66	-600	800	7400	0.17	930	1.4	9	0.041	0.03	0.6	0.019
273333	MMI	385186	5346991	AGD66	-550	800	3400	0.10	610	0.5	5	0.010	0.01	0.3	0.008
273334	MMI	385186	5346991	AGD66	-550	800	3100	0.10	910	0.7	5	0.012	0.01	0.3	0.009
273335	MMI	385229	5346966	AGD66	-500	800	6800	0.25	1270	1.4	35	0.086	0.02	4.1	0.025
273336	MMI	385271	5346941	AGD66	-450	800	9800	0.27	1450	1.3	26	0.066	0.02	4.3	0.02
273337	MMI	385313	5346917	AGD66	-400	800	10000	0.41	1020	1.2	23	0.064	0.01	11.5	0.02
273338	MMI	385356	5346892	AGD66	-350	800	5400	0.13	390	1.2	9	0.027	0.01	0.3	0.012
273339	MMI	385398	5346867	AGD66	-300	800	4100	0.15	2330	1.3	9	0.013	0.01	0.5	0.012

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273340	MMI	385441	5346843	AGD66	-250	800	3300	0.14	890	0.8	16	0.025	0.01	0.5	0.013
273341	MMI	385483	5346818	AGD66	-200	800	4100	0.16	380	1.7	15	0.029	0.01	0.6	0.014
273342	MMI	385525	5346793	AGD66	-150	800	3000	4.70	740	2.1	141	-0.001	0.01	0.2	0.039
273343	MMI	385568	5346769	AGD66	-100	800	1000	6.80	1940	3.1	263	-0.001	0.03	0.0	0.026
273344	MMI	385610	5346744	AGD66	-50	800	2600	0.95	1170	1.6	99	-0.001	0.02	0.4	0.026
273345	MMI	385653	5346719	AGD66	0	800	3900	0.82	1010	1.5	68	0.018	0.01	0.7	0.023
273346	MMI	385695	5346694	AGD66	50	800	6000	0.71	1210	2.3	116	0.003	0.02	0.6	0.29
273347	MMI	385738	5346670	AGD66	100	800	1900	5.50	1360	3.3	95	-0.001	0.03	0.2	0.026
273348	MMI	385780	5346645	AGD66	150	800	3200	5.30	820	3.9	191	0.002	0.04	0.4	0.03
273349	MMI	385822	5346620	AGD66	200	800	4500	1.30	5910	2.0	70	0.004	0.01	0.4	0.02
273350	MMI	385865	5346596	AGD66	250	800	2400	4.30	1250	3.5	178	0.003	0.02	0.3	0.032
273351	MMI	385907	5346571	AGD66	300	800	1000	2.80	2190	4.2	148	0.008	0.48	0.0	0.021
273352	MMI	385950	5346546	AGD66	350	800	400	4.20	790	9.7	233	-0.001	0.21	0.0	0.027
273353	MMI	385992	5346522	AGD66	400	800	2500	0.61	1190	2.4	47	0.030	0.03	0.5	0.018
273354	MMI	386034	5346497	AGD66	450	800	450	0.15	1210	1.0	7	0.016	0.01	0.2	0.006
273355	MMI	386077	5346472	AGD66	500	800	150	0.11	1480	1.2	5	0.033	0.01	0.5	0.009
273356	MMI	386027	5346943	AGD66	200	1200	5600	0.56	1470	4.5	104	0.020	0.14	1.6	0.042
273357	MMI	385984	5346969	AGD66	150	1200	1600	0.75	280	2.3	25	0.008	0.02	0.2	0.013
273358	MMI	385941	5346994	AGD66	100	1200	6800	2.10	1950	9.2	96	0.074	0.53	0.8	0.01
273359	MMI	385897	5347019	AGD66	50	1200	9000	4.90	1960	14.0	165	0.165	1.30	0.8	0.027
273360	MMI	385854	5347044	AGD66	0	1200	7700	4.40	1250	5.7	317	0.004	0.22	0.9	0.045
273361	MMI	385811	5347070	AGD66	-50	1200	3400	1.10	510	2.4	67	0.013	0.02	0.5	0.026
273362	MMI	385768	5347095	AGD66	-100	1200	1600	2.60	640	4.2	64	0.003	0.04	0.2	0.035
273363	MMI	385725	5347120	AGD66	-150	1200	250	4.60	620	11.0	223	0.001	0.04	0.1	0.025
273364	MMI	385682	5347145	AGD66	-200	1200	1700	8.60	960	10.0	193	0.003	0.01	0.4	0.042
273365	MMI	385639	5347171	AGD66	-250	1200	150	7.40	1200	6.6	254	-0.001	0.04	0.1	0.036
273366	MMI	385595	5347196	AGD66	-300	1200	3100	2.10	1610	4.8	93	0.075	0.08	0.6	0.028
273367	MMI	385552	5347221	AGD66	-350	1200	2100	5.50	1800	5.7	323	0.002	0.07	0.3	0.04
273368	MMI	385509	5347246	AGD66	-400	1200	450	4.40	1200	4.4	210	0.001	0.03	0.1	0.03
273369	MMI	385466	5347272	AGD66	-450	1200	650	3.60	1030	4.1	161	0.001	0.07	0.2	0.019
273370	MMI	385423	5347297	AGD66	-500	1200	57000	1.30	650	1.9	39	0.031	0.96	5.1	0.036
273371	MMI	385380	5347322	AGD66	-550	1200	26000	2.80	1020	1.3	131	0.036	0.67	11.5	0.065
273372	MMI	385337	5347347	AGD66	-600	1200	95000	2.90	1500	3.0	88	0.101	0.27	14.5	0.075
273373	MMI	385294	5347373	AGD66	-650	1200	428000	0.67	1690	0.6	18	0.026	0.16	3.5	0.036
273374	MMI	385250	5347398	AGD66	-700	1200	10000	8.90	1460	5.8	258	0.017	0.65	0.1	0.041
273375	MMI	385207	5347423	AGD66	-750	1200	5400	5.70	1070	7.5	176	0.080	1.10	8.2	0.025
273376	MMI	385164	5347448	AGD66	-800	1200	1900	11.00	1010	6.6	343	0.004	0.08	0.1	0.041
273377	MMI	385121	5347473	AGD66	-850	1200	11000	2.70	760	3.7	128	0.134	0.03	3.2	0.029
273378	MMI	385078	5347499	AGD66	-900	1200	3500	0.28	390	2.8	21	0.080	0.02	1.8	0.019
273379	MMI	385036	5347524	AGD66	-950	1200	6500	5.50	630	4.8	134	0.001	0.03	0.2	0.038
273380	MMI	384993	5347549	AGD66	-1000	1200	3300	5.10	1070	4.9	134	0.095	0.66	9.6	0.03
273381	MMI	384950	5347574	AGD66	-1050	1200	3000	10.50	1110	7.4	339	0.007	0.09	0.3	0.054
273382	MMI	384908	5347599	AGD66	-1100	1200	-50	0.32	1310	2.6	54	0.039	0.02	0.4	0.017

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_	Local_	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273383	MMI	384908	5347599	AGD66	-1100	1200	-50	0.33	1590	2.5	48	0.038	0.01	0.7	0.017
273384	MMI	384865	5347624	AGD66	-1150	1200	2200	16.00	2710	5.7	299	0.109	0.08	1.7	0.046
273385	MMI	384822	5347650	AGD66	-1200	1200	1500	3.10	920	4.5	92	0.024	0.07	0.2	0.024
273386	MMI	384780	5347675	AGD66	-1250	1200	-50	6.30	700	5.5	178	0.004	0.05	0.2	0.032
273387	MMI	384737	5347700	AGD66	-1300	1200	-50	3.40	820	3.6	124	0.016	0.02	0.3	0.028
273388	MMI	384694	5347725	AGD66	-1350	1200	15000	0.28	1260	3.1	41	0.153	0.03	12.0	0.023
273389	MMI	384652	5347750	AGD66	-1400	1200	14000	0.22	1550	2.7	24	0.142	0.03	14.0	0.02
273390	MMI	384609	5347775	AGD66	-1450	1200	5500	0.43	1390	3.8	47	0.120	0.03	1.1	0.018
273391	MMI	384567	5347801	AGD66	-1500	1200	-50	0.51	270	2.2	13	0.025	0.01	0.1	0.006
273392	MMI	384524	5347826	AGD66	-1550	1200	-50	2.30	670	3.6	51	0.020	0.02	0.2	0.033
273393	MMI	384481	5347851	AGD66	-1600	1200	-50	0.65	1110	2.5	27	0.084	0.04	0.3	0.022
273394	MMI	384439	5347876	AGD66	-1650	1200	6300	0.31	1570	2.8	55	0.139	0.02	7.5	0.023
273395	MMI	384396	5347901	AGD66	-1700	1200	14000	0.94	810	4.4	39	0.192	0.02	11.5	0.024
273396	MMI	384353	5347926	AGD66	-1750	1200	250	0.29	840	2.4	27	0.114	0.03	0.8	0.016
273397	MMI	384311	5347952	AGD66	-1800	1200	35000	2.50	1760	4.1	231	0.242	0.21	4.6	0.076
273398	MMI	384268	5347977	AGD66	-1850	1200	5900	6.40	1160	3.6	261	0.007	0.04	0.5	0.046
273399	MMI	384225	5348002	AGD66	-1900	1200	-50	8.30	790	6.9	156	0.010	0.10	0.0	0.045
273400	MMI	384183	5348027	AGD66	-1950	1200	-50	8.10	670	7.3	144	0.015	0.12	0.0	0.04
273401	MMI	384140	5348052	AGD66	-2000	1200	-50	2.00	990	2.4	59	0.010	0.07	0.1	0.025
273402	MMI	384090	5348061	AGD66	-2050	1200	-50	0.32	340	1.7	10	0.211	0.03	0.2	0.017
273403	MMI	384040	5348070	AGD66	-2100	1200	41000	0.46	870	1.5	23	0.110	0.02	13.5	0.028
273404	MMI	384004	5347923	AGD66	-2125	1000	3100	0.45	640	3.9	11	0.434	0.05	17.0	0.002
273405	MMI	384026	5347908	AGD66	-2100	1000	5300	0.44	560	3.4	9	0.257	0.09	13.0	0.005
273406	MMI	384070	5347885	AGD66	-2050	1000	7000	0.50	800	2.3	15	0.157	0.02	3.8	0.008
273407	MMI	384111	5347864	AGD66	-2000	1000	5100	0.61	760	2.8	16	0.257	0.05	9.7	0.008
273408	MMI	384151	5347843	AGD66	-1950	1000	7900	0.47	2400	3.1	28	0.294	0.05	12.0	0.006
273409	MMI	384190	5347822	AGD66	-1900	1000	8500	0.40	640	3.3	31	0.155	0.04	9.7	0.02
273410	MMI	384227	5347793	AGD66	-1850	1000	16000	0.73	1750	3.4	84	0.105	0.04	11.0	0.026
273411	MMI	384263	5347764	AGD66	-1800	1000	16000	0.58	2710	3.0	58	0.069	0.03	5.2	0.016
273412	MMI	384299	5347736	AGD66	-1750	1000	20000	0.56	1390	5.8	75	0.207	0.04	21.5	0.017
273413	MMI	384335	5347707	AGD66	-1700	1000	16000	0.60	960	4.2	73	0.054	0.03	3.2	0.029
273414	MMI	384377	5347687	AGD66	-1650	1000	24000	16.50	1670	4.4	380	0.031	0.11	4.3	0.085
273415	MMI	384419	5347667	AGD66	-1600	1000	4400	0.94	870	6.5	67	0.171	0.10	3.6	0.017
273416	MMI	384460	5347648	AGD66	-1550	1000	7700	0.49	1130	4.1	74	0.055	0.03	4.5	0.028
273417	MMI	384502	5347628	AGD66	-1500	1000	17000	0.60	1460	3.9	55	0.143	0.05	5.4	0.047
273418	MMI	384543	5347605	AGD66	-1450	1000	21000	0.54	1980	3.6	51	0.158	0.11	53.5	0.016
273419	MMI	384583	5347582	AGD66	-1400	1000	24000	0.62	1490	4.3	68	0.216	0.09	8.8	0.028
273420	MMI	384624	5347559	AGD66	-1350	1000	8200	14.50	1370	12.0	498	0.006	0.75	0.6	0.067
273421	MMI	384664	5347535	AGD66	-1300	1000	3700	7.50	2030	5.5	319	0.060	0.94	1.1	0.06
273422	MMI	384704	5347508	AGD66	-1250	1000	5300	0.33	440	2.0	56	0.014	0.01	4.9	0.02
273423	MMI	384744	5347481	AGD66	-1200	1000	14000	0.42	860	4.6	57	0.096	0.06	7.1	0.029
273424	MMI	384784	5347454	AGD66	-1150	1000	15000	3.50	1270	6.9	72	0.188	0.12	47.5	0.017
273425	MMI	384824	5347426	AGD66	-1100	1000	15000	4.80	1700	3.8	326	0.054	0.09	5.1	0.057

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273426	MMI	384864	5347399	AGD66	-1050	1000	4800	4.70	560	6.4	57	0.016	0.02	1.1	0.027
273427	MMI	384904	5347372	AGD66	-1000	1000	32000	0.45	770	3.2	89	0.032	0.02	8.8	0.016
273428	MMI	384944	5347345	AGD66	-950	1000	2400	0.39	390	2.7	13	0.029	0.02	1.1	0.008
273429	MMI	384984	5347317	AGD66	-900	1000	3500	0.38	670	3.1	37	0.038	0.02	3.0	0.012
273430	MMI	385024	5347290	AGD66	-850	1000	450	0.41	280	2.8	6	0.011	0.01	0.9	0.003
273431	MMI	385066	5347265	AGD66	-800	1000	-50	7.10	840	10.0	164	0.002	0.04	0.1	0.017
273432	MMI	385109	5347241	AGD66	-750	1000	6300	11.50	1290	2.6	128	0.127	1.40	0.8	0.028
273433	MMI	385152	5347217	AGD66	-700	1000	8700	12.50	6720	4.6	319	0.095	2.30	12.0	0.077
273434	MMI	385195	5347193	AGD66	-650	1000	12000	18.00	2890	9.9	415	0.067	1.50	3.8	0.069
273435	MMI	385238	5347169	AGD66	-600	1000	32000	10.00	9250	7.1	425	0.037	0.69	4.6	0.046
273436	MMI	385280	5347145	AGD66	-550	1000	14000	0.52	200	2.3	45	0.015	0.02	4.9	0.017
273437	MMI	385323	5347121	AGD66	-500	1000	11000	5.00	1320	4.8	273	0.037	2.00	3.0	0.035
273438	MMI	385366	5347097	AGD66	-450	1000	2800	1.30	1060	2.4	44	0.021	0.04	2.9	0.018
273439	MMI	385409	5347073	AGD66	-400	1000	1900	0.28	330	0.9	13	0.022	0.02	1.8	0.01
273440	MMI	385452	5347049	AGD66	-350	1000	3200	0.63	390	1.3	28	0.040	0.02	2.6	0.007
273441	MMI	385495	5347025	AGD66	-300	1000	2600	0.90	60	1.2	14	0.020	0.01	1.4	0.012
273442	MMI	385538	5347001	AGD66	-250	1000	6200	4.80	1010	1.1	100	0.014	0.01	1.5	0.025
273443	MMI	385581	5346977	AGD66	-200	1000	7000	4.70	520	1.1	386	0.014	0.01	1.4	0.076
273444	MMI	385624	5346953	AGD66	-150	1000	4600	2.10	280	0.9	80	0.023	0.02	2.1	0.02
273445	MMI	385667	5346929	AGD66	-100	1000	6100	1.60	980	3.2	40	0.013	0.01	1.5	0.018
273446	MMI	385709	5346905	AGD66	-50	1000	18000	2.30	550	8.0	125	0.079	0.02	32.0	0.048
273447	MMI	385752	5346881	AGD66	-0	1000	6500	4.10	1220	4.6	108	0.021	0.02	0.5	0.031
273448	MMI	385795	5346857	AGD66	50	1000	14000	0.41	30	1.7	23	0.040	0.01	2.6	0.012
273449	MMI	385838	5346833	AGD66	100	1000	5500	4.10	560	23.0	262	0.020	0.07	0.1	0.021
273450	MMI	385881	5346809	AGD66	150	1000	15000	5.30	1040	12.0	281	0.031	0.07	7.9	0.034
273451	MMI	385924	5346785	AGD66	200	1000	8400	11.00	1540	10.5	383	0.122	1.60	1.3	0.047
273452	MMI	385967	5346761	AGD66	250	1000	1700	1.50	100	10.5	79	0.023	0.02	0.3	0.017
273453	MMI	386010	5346737	AGD66	300	1000	4600	6.70	1610	8.6	262	0.047	1.40	8.7	0.034
273454	MMI	383706	5346770	AGD66	-1800	-200	2300	0.16	280	0.4	8	0.126	0.12	31.0	-0.001
273455	MMI	383747	5346743	AGD66	-1750	-200	3600	0.20	330	1.7	15	0.042	0.03	3.1	0.014
273456	MMI	383787	5346715	AGD66	-1700	-200	2500	0.42	360	2.3	14	0.015	0.01	1.8	0.011
273457	MMI	383828	5346688	AGD66	-1650	-200	2500	2.60	600	2.9	113	0.014	0.02	0.9	0.024
273458	MMI	383868	5346661	AGD66	-1600	-200	2400	0.63	210	1.9	21	0.020	0.01	1.4	0.015
273459	MMI	383910	5346634	AGD66	-1550	-200	2100	0.29	280	1.4	17	0.041	0.02	2.9	0.013
273460	MMI	383952	5346607	AGD66	-1500	-200	1000	0.21	490	2.1	19	0.052	0.03	3.1	0.017
273461	MMI	383994	5346580	AGD66	-1450	-200	1700	0.27	190	2.7	10	0.094	0.04	2.8	0.015
273462	MMI	384037	5346553	AGD66	-1400	-200	1300	0.27	240	1.8	11	0.056	0.03	2.2	0.008
273463	MMI	384077	5346526	AGD66	-1350	-200	2700	0.37	330	2.3	21	0.123	0.03	2.1	0.007
273464	MMI	384118	5346500	AGD66	-1300	-200	6400	0.27	860	4.5	22	0.104	0.03	8.0	0.015
273465	MMI	384159	5346473	AGD66	-1250	-200	11000	0.13	530	3.0	15	0.103	0.04	31.5	0.001
273466	MMI	384200	5346447	AGD66	-1200	-200	2300	0.15	900	1.7	15	0.041	0.02	6.0	0.017
273467	MMI	384242	5346427	AGD66	-1150	-200	3500	0.11	940	1.9	17	0.039	0.02	3.5	0.017
273468	MMI	384284	5346407	AGD66	-1100	-200	2600	0.06	160	0.8	8	0.026	0.01	2.0	0.007

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
273469	MMI	384326	5346387	AGD66	-1050	-200	3000	1.10	860	4.3	81	0.041	0.08	0.8	0.021
273470	MMI	384369	5346352	AGD66	-1000	-200	9300	8.70	1970	7.1	260	0.093	1.90	6.6	0.05
273471	MMI	384413	5346327	AGD66	-950	-200	6600	0.22	1790	3.3	23	0.132	0.14	61.5	0.007
273472	MMI	384459	5346312	AGD66	-900	-200	10000	0.21	380	0.5	7	0.078	0.10	50.5	-0.001
273473	MMI	384505	5346298	AGD66	-850	-200	11000	0.21	510	0.2	13	0.077	0.07	48.5	-0.001
273474	MMI	384551	5346283	AGD66	-800	-200	4500	0.10	270	0.1	2	0.032	0.04	19.5	-0.001
273475	MMI	384599	5346273	AGD66	-750	-200	6100	0.12	450	1.0	5	0.100	0.07	61.0	0.007
273476	MMI	384647	5346263	AGD66	-700	-200	3300	0.06	100	2.9	0	0.010	0.03	15.5	-0.001
273477	MMI	384695	5346253	AGD66	-650	-200	4000	0.02	3610	0.3	2	0.011	0.01	8.0	0.005
273478	MMI	384743	5346243	AGD66	-600	-200	1200	0.06	4540	4.1	4	0.018	0.01	12.0	0.01
273479	MMI	384788	5346225	AGD66	-550	-200	5000	0.34	310	1.2	10	0.080	0.14	42.5	-0.001
273480	MMI	384834	5346207	AGD66	-500	-200	4600	0.14	100	0.1	2	0.035	0.05	22.5	0.003
273481	MMI	384879	5346189	AGD66	-450	-200	9500	0.17	960	7.2	19	0.076	0.04	15.5	0.007
273482	MMI	384924	5346171	AGD66	-400	-200	10000	0.19	590	5.6	21	0.111	0.04	29.5	0.029
273483	MMI	384949	5346135	AGD66	-350	-200	8800	0.24	780	0.2	17	0.088	0.10	68.0	-0.001
273484	MMI	384969	5346094	AGD66	-300	-200	7900	0.16	480	3.2	6	0.080	0.03	10.5	0.008
273485	MMI	384989	5346054	AGD66	-250	-200	4500	0.14	500	28.0	0	0.014	0.06	22.0	-0.001
273486	MMI	385010	5346013	AGD66	-200	-200	6100	0.25	190	0.1	5	0.074	0.05	24.5	-0.001
273487	MMI	385049	5345985	AGD66	-150	-200	5900	0.16	90	4.2	2	0.042	0.03	26.5	-0.001
273488	MMI	385089	5345958	AGD66	-100	-200	5800	0.16	210	0.1	3	0.022	0.04	52.5	-0.001
273489	MMI	385129	5345930	AGD66	-50	-200	9000	0.20	390	0.4	7	0.086	0.06	42.5	-0.001
273490	MMI	385169	5345902	AGD66	0	-200	8600	0.14	370	0.3	8	0.087	0.05	39.0	-0.001
273491	MMI	385208	5345874	AGD66	50	-200	15000	0.15	360	0.2	7	0.077	0.04	49.5	-0.001
273492	MMI	385248	5345847	AGD66	100	-200	13000	0.17	370	0.0	4	0.043	0.06	43.5	-0.001
273493	MMI	385288	5345819	AGD66	150	-200	11000	0.19	460	1.4	10	0.052	0.03	17.0	0.004
273494	MMI	385328	5345791	AGD66	200	-200	3300	0.21	340	0.5	5	0.033	0.06	50.5	-0.001
273495	MMI	385367	5345763	AGD66	250	-200	4900	0.16	550	0.0	7	0.040	0.06	86.0	-0.001
273496	MMI	385407	5345736	AGD66	300	-200	6100	0.09	320	0.2	8	0.049	0.04	60.5	-0.001
273497	MMI	385448	5345710	AGD66	350	-200	5400	0.18	220	0.8	2	0.029	0.08	63.5	-0.001
273498	MMI	385489	5345684	AGD66	400	-200	1800	0.32	340	1.7	6	0.071	0.11	37.0	-0.001
273499	MMI	385530	5345658	AGD66	450	-200	1200	0.09	320	0.8	8	0.041	0.01	2.5	0.013
273500	MMI	385571	5345632	AGD66	500	-200	3700	0.15	290	1.7	7	0.093	0.04	40.5	-0.001
273501	MMI	385611	5345606	AGD66	550	-200	8500	0.28	1060	2.6	20	0.096	0.03	55.5	0.02
273502	MMI	385652	5345580	AGD66	600	-200	2100	0.18	510	0.9	8	0.063	0.02	1.7	0.012
273503	MMI	385693	5345554	AGD66	650	-200	5100	0.21	330	1.4	10	0.174	0.04	17.0	0.005
273504	MMI	385734	5345528	AGD66	700	-200	3500	0.43	100	0.6	0	0.028	0.04	13.5	-0.001
274201	MMI	384064	5347782	AGD66	-1950	900	25000	0.67	860	3.2	41	0.205	0.04	15.0	-0.001
274202	MMI	384291	5347627	AGD66	-1650	900	28000	0.64	770	6.7	31	0.165	0.05	18.0	0.009
274203	MMI	384527	5347393	AGD66	-1350	800	2600	4.50	-10	3.4	70	0.004	0.02	0.2	0.068
274204	MMI	384335	5347603	AGD66	-1600	900	4500	0.65	-10	4.5	45	0.065	0.03	1.1	0.032
274205	MMI	384510	5347510	AGD66	-1400	900	8000	0.31	-10	3.2	35	0.067	0.02	2.7	0.01
274206	MMI	386374	5347853	AGD66	0	2200	850	5.70	-10	15.0	165	0.014	0.89	0.0	0.02
274207	MMI	384080	5347673	AGD66	-1900	800	4300	1.10	-10	1.9	26	0.080	0.06	0.3	0.044

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
274208	MMI	384248	5347650	AGD66	-1700	900	14000	0.50	-10	3.1	15	0.060	0.03	13.5	-0.001
274209	MMI	385993	5348091	AGD66	-500	2200	1900	1.30	-10	2.0	12	0.072	0.03	0.3	0.002
274210	MMI	384162	5347622	AGD66	-1800	800	4700	0.44	-10	3.8	18	0.075	0.03	1.1	0.012
274211	MMI	384901	5348794	AGD66	-1850	2200	750	4.70	-10	1.4	79	0.011	0.34	0.1	0.021
274212	MMI	384981	5348740	AGD66	-1750	2200	150	10.00	-10	2.1	165	0.017	3.20	0.2	0.031
274213	MMI	384624	5347559	AGD66	-1350	1000	1300	16.00	340	6.5	340	0.009	0.63	1.0	0.131
274214	MMI	384543	5347605	AGD66	-1450	1000	4700	0.43	140	2.3	37	0.109	0.05	1.8	0.019
274215	MMI	384466	5347534	AGD66	-1450	900	8000	0.37	-10	3.6	42	0.076	0.03	2.5	0.012
274216	MMI	386337	5347876	AGD66	-50	2200	3800	3.00	-10	8.2	177	0.033	0.53	0.7	0.039
274217	MMI	384284	5347546	AGD66	-1650	800	2700	0.34	-10	3.3	9	0.028	0.01	0.5	0.026
274218	MMI	385870	5348172	AGD66	-650	2200	1500	11.00	-10	2.0	129	0.001	0.08	0.2	0.029
274219	MMI	386299	5347899	AGD66	-100	2200	1300	15.00	-10	8.7	350	0.011	0.79	0.6	0.042
274220	MMI	386188	5347968	AGD66	-250	2200	5600	0.33	-10	2.4	45	0.192	0.04	1.1	0.021
274221	MMI	386225	5347945	AGD66	-200	2200	4300	1.50	-10	3.8	29	0.032	0.02	0.4	0.017
274222	MMI	384335	5347707	AGD66	-1700	1000	4300	0.87	-10	3.4	27	0.043	0.02	0.5	0.015
274224	MMI	385870	5348316	AGD66	-900	2200	4900	1.40	-10	3.3	31	0.263	0.06	0.4	0.03
274225	MMI	385020	5348712	AGD66	-1700	2200	1200	5.80	-10	1.3	158	0.010	0.26	0.1	0.014
274226	MMI	384190	5347822	AGD66	-1900	1000	7700	0.70	-10	3.1	60	0.069	0.04	2.9	0.009
274227	MMI	384942	5348768	AGD66	-1800	2200	350	4.00	-10	2.0	114	0.011	0.98	0.0	0.035
274228	MMI	384299	5347736	AGD66	-1750	1000	3200	0.28	-10	2.8	11	0.175	0.03	1.1	0.004
274229	MMI	384263	5347764	AGD66	-1800	1000	6300	0.38	160	2.6	35	0.060	0.02	0.8	0.006
274230	MMI	384176	5347707	AGD66	-1800	900	19000	0.73	1030	2.0	52	0.159	0.04	27.5	-0.001
274231	MMI	384568	5347368	AGD66	-1300	800	2800	6.80	550	4.7	328	0.003	0.06	0.1	0.084
274232	MMI	386262	5347922	AGD66	-150	2200	-50	12.00	510	6.2	392	0.009	2.70	0.0	0.027
274233	MMI	383982	5347818	AGD66	-2050	900	1800	0.59	1560	3.0	244	0.181	0.08	0.8	0.014
274234	MMI	384243	5347571	AGD66	-1700	800	12000	0.30	620	4.0	50	0.108	0.06	2.8	0.011
274235	MMI	385952	5348118	AGD66	-550	2200	1700	0.77	1570	1.4	44	0.059	0.03	0.2	0.002
274236	MMI	384777	5348872	AGD66	-2000	2200	750	1.70	580	1.7	59	0.010	0.59	0.0	0.007
274237	MMI	384819	5348846	AGD66	-1950	2200	100	3.60	420	1.1	131	0.023	2.80	0.1	0.028
274238	MMI	386113	5348014	AGD66	-350	2200	9500	0.30	110	1.5	5	0.099	0.04	0.4	0.006
274239	MMI	383918	5347774	AGD66	-2100	800	3500	0.72	910	2.0	126	0.086	0.11	0.3	0.016
274240	MMI	385746	5348254	AGD66	-800	2200	800	3.50	810	1.9	108	0.005	0.13	0.1	0.015
274241	MMI	384105	5347764	AGD66	-1900	900	61000	0.79	1090	4.5	141	0.105	0.05	16.0	-0.001
274242	MMI	384040	5347698	AGD66	-1950	800	3500	0.45	500	1.9	38	0.031	0.03	0.2	0.02
274243	MMI	384111	5347864	AGD66	-2000	1000	4800	0.85	230	2.8	40	0.131	0.06	0.4	-0.001
274244	MMI	384121	5347647	AGD66	-1850	800	3300	1.20	130	1.8	34	0.034	0.02	0.1	0.149
274245	MMI	384140	5347736	AGD66	-1850	900	50000	0.85	2280	4.4	298	0.250	0.02	72.0	0.013
274246	MMI	385788	5348227	AGD66	-750	2200	3100	8.90	770	2.5	301	0.004	0.13	0.3	0.033
274247	MMI	384026	5347908	AGD66	-2100	1000	11000	0.67	510	4.5	62	0.256	0.16	7.6	-0.001
274248	MMI	384422	5347557	AGD66	-1500	900	1800	0.36	370	3.0	32	0.096	0.04	0.7	0.006
274249	MMI	386150	5347991	AGD66	-300	2200	3300	0.59	550	2.2	44	0.073	0.04	0.2	0.008
274250	MMI	385911	5348145	AGD66	-600	2200	500	4.80	470	2.4	97	0.006	0.04	0.1	0.01
274251	MMI	386076	5348037	AGD66	-400	2200	1300	0.47	220	2.1	20	0.134	0.03	0.2	0.003

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
274252	MMI	383999	5347723	AGD66	-2000	800	6100	0.55	280	2.0	25	0.096	0.05	0.4	0.007
274253	MMI	384597	5347464	AGD66	-1300	900	18000	4.90	430	1.6	192	0.064	1.30	8.5	0.037
274254	MMI	385829	5348199	AGD66	-700	2200	-50	6.10	470	2.6	254	0.002	0.07	0.1	0.056
274255	MMI	384487	5347419	AGD66	-1400	800	3400	0.37	300	2.5	39	0.050	0.02	0.5	0.017
274257	MMI	384365	5347495	AGD66	-1550	800	4800	0.32	-10	3.3	51	0.130	0.04	1.1	0.01
274258	MMI	383941	5347836	AGD66	-2100	900	1700	0.76	430	4.0	53	0.033	0.18	0.8	0.022
274259	MMI	384151	5347843	AGD66	-1950	1000	9200	0.50	-10	2.5	86	0.167	0.04	2.8	-0.001
274260	MMI	384419	5347667	AGD66	-1600	1000	5800	0.51	-10	3.6	21	0.042	0.05	3.4	-0.001
274261	MMI	384583	5347582	AGD66	-1400	1000	11000	0.56	1550	1.1	40	0.078	0.06	36.5	-0.001
274262	MMI	384212	5347679	AGD66	-1750	900	1300	0.43	-10	3.6	65	0.060	0.04	0.4	0.021
274263	MMI	385708	5348285	AGD66	-850	2200	950	0.66	-10	1.1	36	0.084	0.03	0.2	0.019
274264	MMI	384377	5347687	AGD66	-1650	1000	4000	0.70	290	2.2	67	0.037	0.02	1.1	0.017
274265	MMI	386035	5348064	AGD66	-450	2200	2800	0.52	50	2.3	0	0.087	0.07	0.3	-0.001
274266	MMI	384324	5347520	AGD66	-1600	800	2400	0.98	-10	5.5	25	0.043	0.03	0.1	0.028
274267	MMI	383959	5347749	AGD66	-2050	800	11000	0.31	-10	0.1	0	0.041	0.15	29.0	-0.001
274268	MMI	384860	5348820	AGD66	-1900	2200	1200	17.50	1210	1.0	680	0.010	0.37	0.2	0.033
274269	MMI	384460	5347648	AGD66	-1550	1000	400	0.44	190	3.9	57	0.049	0.03	0.2	0.015
274270	MMI	384405	5347470	AGD66	-1500	800	1600	0.21	-10	1.5	14	0.026	0.01	0.3	0.005
274271	MMI	384664	5347535	AGD66	-1300	1000	850	12.00	500	7.9	661	0.046	0.89	0.0	0.06
274272	MMI	384553	5347487	AGD66	-1350	900	300	15.00	1220	6.8	437	0.010	0.17	0.2	0.064
274273	MMI	385059	5348684	AGD66	-1650	2200	1800	28.50	2420	3.1	1400	0.208	7.50	8.0	0.044
274274	MMI	384070	5347885	AGD66	-2050	1000	3100	0.73	-10	3.0	65	0.155	0.08	1.9	-0.001
274275	MMI	384502	5347628	AGD66	-1500	1000	700	0.55	250	3.8	57	0.046	0.02	0.1	0.011
274276	MMI	384202	5347596	AGD66	-1750	800	5300	0.42	230	2.8	40	0.140	0.06	1.5	0.007
274277	MMI	384227	5347793	AGD66	-1850	1000	10000	0.58	-10	2.8	44	0.141	0.03	3.6	0.005
274278	MMI	384023	5347800	AGD66	-2000	900	4000	0.85	460	2.7	280	0.034	0.06	1.9	0.02
274279	MMI	384446	5347444	AGD66	-1450	800	1600	0.34	-10	2.0	35	0.031	0.03	0.6	0.01
274280	MMI	384379	5347580	AGD66	-1550	900	7700	0.71	2550	3.3	159	0.125	0.04	2.4	0.013
274281	MMI	385395	5348509	AGD66	-1250	2200	3100	29.00	5310	8.8	724	0.125	0.94	0.2	0.044
274282	MMI	385555	5348406	AGD66	-1050	2200	900	35.00	680	3.9	1400	0.028	0.55	0.4	0.067
274283	MMI	385477	5348463	AGD66	-1150	2200	-50	16.50	480	1.9	582	0.046	6.00	0.1	0.038
274285	MMI	385141	5348634	AGD66	-1550	2200	1200	10.50	1540	4.1	501	0.088	4.60	0.0	0.036
274286	MMI	385594	5348378	AGD66	-1000	2200	1100	2.40	1040	6.6	393	0.022	0.09	0.9	0.072
274287	MMI	385225	5348588	AGD66	-1450	2200	-50	5.40	840	17.5	501	0.031	2.10	0.0	0.031
274288	MMI	385267	5348565	AGD66	-1400	2200	-50	4.10	1060	6.7	258	0.020	2.20	0.0	0.043
274289	MMI	385438	5348491	AGD66	-1200	2200	5600	66.50	4690	1.8	1800	0.180	0.56	2.4	0.087
274290	MMI	385352	5348528	AGD66	-1300	2200	3400	23.50	2430	8.4	941	0.049	1.90	0.6	0.049
274291	MMI	385099	5348656	AGD66	-1600	2200	-50	8.20	910	2.3	483	0.031	2.10	0.0	0.042
274292	MMI	385632	5348347	AGD66	-950	2200	500	18.00	1040	3.1	594	0.030	0.20	0.2	0.081
274293	MMI	385183	5348611	AGD66	-1500	2200	-50	4.30	310	1.3	182	0.007	0.25	0.0	0.046
274294	MMI	385310	5348546	AGD66	-1350	2200	500	6.70	1710	6.8	450	0.029	0.50	0.0	0.051
274295	MMI	385516	5348435	AGD66	-1100	2200	3300	4.60	710	9.8	311	0.085	3.60	0.3	0.183
330302	MMI	386061	5347359	AGD66	-25	1600	4000	0.31	260	21.5	0	0.006	0.02	2.0	-0.001

MMI Soil assay results

Sample_No	Sample_Type	UTM_East	UTM_North	UTM_Datum	Local_E	Local_N	Ag_ppt	As_ppm	Au_ppt	Ba_ppm	Bi_ppb	Cd_ppm	Co_ppm	Cu_ppm	Mo_ppm
330303	MMI	385848	5347491	AGD66	-275	1600	9200	0.34	1080	3.6	0	0.073	0.04	5.0	0.023
330304	MMI	385742	5347556	AGD66	-400	1600	157000	64.50	33000	3.5	0	0.087	0.22	1.3	0.097
330305	MMI	386083	5347346	AGD66	0	1600	7300	8.00	2590	33.5	0	0.066	0.88	1.2	0.037
330306	MMI	385785	5347530	AGD66	-350	1600	11000	0.75	4450	5.9	0	0.243	0.14	1.8	0.035
330307	MMI	386040	5347372	AGD66	-50	1600	24000	6.20	2160	40.5	0	0.328	2.00	5.7	0.038
330308	MMI	385806	5347517	AGD66	-325	1600	61000	22.50	5230	5.2	0	0.093	4.70	3.8	0.112
330309	MMI	385891	5347464	AGD66	-225	1600	9900	0.36	1000	2.5	0	0.121	0.03	2.1	0.034
330310	MMI	385687	5347596	AGD66	-475	1600	20000	0.63	23000	2.5	0	0.062	0.03	2.9	0.038
330313	MMI	385955	5347425	AGD66	-150	1600	14000	0.16	670	5.9	0	0.070	0.02	1.8	0.018
330314	MMI	386019	5347385	AGD66	-75	1600	1000	0.89	1240	8.0	0	0.011	0.05	0.3	0.048
330315	MMI	385721	5347570	AGD66	-425	1600	14000	0.19	3000	2.9	0	0.062	0.02	0.9	0.019
330316	MMI	385912	5347451	AGD66	-200	1600	4900	0.21	550	2.8	0	0.075	0.01	1.6	0.019
330317	MMI	385870	5347477	AGD66	-250	1600	15000	0.22	640	2.7	0	0.159	0.02	10.5	0.034
330318	MMI	385997	5347398	AGD66	-100	1600	70000	0.29	1090	6.6	0	0.174	0.05	22.5	0.004
330319	MMI	385836	5347504	AGD66	-375	1600	85000	12.50	10000	6.7	0	0.150	0.31	1.9	0.063
330320	MMI	385675	5347609	AGD66	-500	1600	95000	5.90	83000	1.3	0	0.029	0.03	0.9	0.044
330321	MMI	385934	5347438	AGD66	-175	1600	7600	0.22	870	2.6	0	0.061	0.02	0.9	0.038
330322	MMI	385976	5347412	AGD66	-125	1600	51000	0.13	710	5.2	0	0.066	0.03	7.3	0.014
330324	MMI	385827	5347504	AGD66	-300	1600	21000	16.00	2190	2.7	0	0.023	0.12	1.8	0.084
330325	MMI	385700	5347583	AGD66	-450	1600	11000	0.34	11000	1.6	0	0.025	0.02	1.6	0.014

Cu_ppm	Mo_ppm	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
1.6	0.01	0.049	16.5	430	-10	0.012	-0.001	1.4
1.4	0.009	0.071	13.5	600	-10	0.014	-0.001	1.9
0.638	0.021	0.079	25.5	640	-10	0.051	-0.001	0.437
1.1	0.016	0.345	31.5	660	-10	0.035	-0.001	1.8
0.482	0.017	0.05	2.1	1570	-10	0.025	-0.001	0.831
2	0.014	0.105	46.5	530	-10	0.014	-0.001	3.4
0.735	0.006	0.111	5.3	740	-10	0.008	-0.001	1.3
0.667	0.006	0.384	13.5	90	-10	0.012	-0.001	3.2
0.933	0.008	0.096	17.5	560	-10	0.014	-0.001	1.6
38.5	0.036	0.132	186	-10	-10	0.039	-0.001	4.1
1.6	0.04	0.285	72	650	-10	0.091	-0.001	4.1
3.4	0.105	0.092	78	670	-10	0.328	-0.001	1.8
4.8	0.095	2.5	178.5	600	120	0.283	0.003	12
3.8	0.107	0.263	65	570	40	0.194	0.001	0.327
4.1	0.032	0.072	40	870	150	0.026	-0.001	2.5
4.3	0.052	0.102	59	1630	150	0.077	-0.001	5.3
0.649	0.038	0.222	75	1200	120	0.174	-0.001	0.117
1.2	0.028	0.129	30.5	760	50	0.069	-0.001	0.138
16.5	0.047	0.072	25.5	610	50	0.026	-0.001	1.2
26	0.018	0.36	93	20	80	0.02	-0.001	8.9
48	0.021	0.362	73.5	1080	50	0.069	0.001	7.3
30	0.019	0.07	68.5	690	70	0.033	0.001	5.2
8.8	0.023	0.075	55.5	510	-10	0.022	-0.001	0.943
6.7	0.025	0.131	15	1500	150	0.029	-0.001	1.1

MMI Soil assay results

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
272949	0.262	16.5	2540	110	0.064	0.003	0.6
272950	0.093	40.5	2980	210	0.074	0.002	0.2
272951	0.117	19.0	1550	120	0.038	-0.001	0.9
272952	0.115	2.8	-10	-10	0.008	-0.001	0.6
272953	0.095	8.3	870	10	0.040	-0.001	0.0
272954	0.195	19.0	880	-10	0.042	0.001	0.1
272955	0.160	8.0	730	30	0.017	0.001	0.2
272956	0.151	8.0	640	70	0.025	0.002	0.1
272957	0.163	16.5	470	-10	0.034	0.002	0.0
272958	0.065	35.5	510	-10	0.021	0.002	3.0
272959	0.038	26.0	510	50	0.016	0.002	2.2
272960	0.042	33.0	770	90	0.080	0.004	0.2
272961	0.164	74.0	2940	200	0.285	0.006	0.7
272962	0.208	54.5	1800	140	0.243	0.003	0.3
272963	0.077	19.5	900	50	0.018	0.002	0.8
272964	0.104	12.0	1350	120	0.023	0.002	0.8
272965	0.190	17.5	1640	120	0.022	-0.001	2.2
272966	0.090	71.5	220	80	0.027	0.001	5.3
272967	0.165	62.0	290	-10	0.037	-0.001	1.4
272968	0.123	56.0	940	80	0.132	-0.001	0.2
272969	0.125	36.0	930	140	0.181	-0.001	0.1
272970	0.036	61.5	980	70	0.137	-0.001	0.3
272971	0.067	99.0	3330	230	0.180	-0.001	0.5
272972	1.400	149.5	980	150	0.245	0.003	32.0
272973	0.294	106.0	870	150	0.263	-0.001	0.1
272974	0.781	87.5	2200	7760	0.094	0.009	23.0
272975	0.193	12.5	2940	2340	0.079	0.007	1.7
272976	0.109	16.5	1280	1370	0.061	0.005	0.5
272977	0.058	20.0	640	820	0.015	0.003	1.7
272978	0.035	8.2	970	400	0.011	0.002	1.3
272979	0.039	16.0	950	170	0.011	0.003	1.8
272980	0.058	13.5	330	220	0.010	0.002	2.3
272981	0.006	7.7	150	90	0.006	0.003	2.5
272982	0.032	13.5	-10	100	0.009	0.004	2.5
272983	0.013	27.0	1920	160	0.057	0.002	0.2
272984	0.051	48.5	1330	70	0.047	0.001	2.8
272985	0.057	71.5	-10	-10	0.035	-0.001	6.7
272986	0.058	136.5	-10	20	0.025	0.004	9.1
272987	0.051	82.0	1030	-10	0.035	0.002	9.1
272988	0.462	106.5	390	100	0.125	0.038	22.5
272989	0.210	78.0	520	40	0.086	0.011	3.2
272990	0.134	58.5	780	140	0.175	0.005	4.1
272991	0.078	43.5	900	90	0.154	-0.001	2.4

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
272992	0.151	35.0	710	80	-0.001	0.003	4.0
272993	0.088	28.0	1100	90	-0.001	-0.001	4.3
272994	0.094	11.0	1140	140	-0.001	-0.001	4.4
272995	0.054	31.0	2090	200	-0.001	-0.001	2.4
272996	0.085	44.0	1390	130	-0.001	-0.001	2.9
272997	0.072	30.0	1150	70	-0.001	-0.001	1.7
272998	0.067	5.7	500	-10	-0.001	-0.001	1.7
272999	0.074	35.5	720	20	0.101	-0.001	0.8
273000	0.047	11.5	1950	50	-0.001	-0.001	1.0
273001	0.093	91.5	960	110	0.077	-0.001	0.4
273002	0.065	37.0	1100	-10	-0.001	-0.001	0.2
273003	0.054	33.0	880	120	-0.001	-0.001	0.8
273004	0.157	43.5	-10	-10	0.374	0.002	7.0
273005	0.107	87.5	2880	120	0.318	0.012	2.6
273006	0.208	130.5	2280	300	-0.001	0.004	8.4
273007	0.473	104.0	-10	240	-0.001	0.006	25.5
273008	0.291	63.5	1740	140	-0.001	-0.001	1.7
273009	0.167	35.0	1160	-10	0.155	-0.001	0.9
273010	0.078	58.0	2340	-10	0.209	-0.001	1.3
273011	0.061	33.5	910	-10	0.041	-0.001	2.5
273012	0.081	51.0	790	-10	0.102	-0.001	1.6
273013	0.106	51.5	1970	40	0.113	-0.001	2.4
273014	0.060	28.5	2470	10	0.112	-0.001	2.6
273015	0.109	37.0	310	-10	0.379	-0.001	0.4
273016	0.260	49.0	2400	270	0.233	0.01	5.3
273017	0.059	36.5	1010	20	0.061	0.003	1.4
273018	0.050	34.0	610	110	0.027	-0.001	1.8
273019	0.042	21.0	670	70	0.213	-0.001	0.9
273020	0.036	22.0	1580	250	0.085	0.001	0.9
273021	0.217	47.0	1260	380	0.246	-0.001	0.9
273022	0.075	22.0	940	90	0.156	-0.001	0.5
273023	0.044	10.0	610	150	0.071	0.001	0.8
273024	0.068	20.5	610	-10	0.044	0.002	1.3
273025	0.036	7.7	1390	-10	0.030	0.001	0.6
273026	0.066	8.6	510	-10	-0.001	-0.001	4.1
273027	0.047	15.5	980	140	0.033	-0.001	2.4
273028	0.041	63.0	1740	290	0.060	0.001	2.4
273029	0.032	18.5	930	-10	0.024	0.002	1.1
273030	0.032	18.5	1360	-10	0.041	0.005	0.8
273031	0.053	19.5	1190	-10	0.019	0.002	1.1
273032	1.000	87.5	1480	160	0.095	-0.001	1.4
273033	0.036	21.0	1480	240	0.050	0.003	0.8
273034	0.105	27.5	780	-10	0.182	0.002	0.9

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273035	0.065	22.0	-10	70	0.012	-0.001	4.9
273036	0.086	48.5	1190	-10	0.025	0.003	3.1
273037	0.033	5.0	60	100	0.012	-0.001	0.8
273038	0.355	8.5	-10	90	0.036	-0.001	21.5
273039	0.271	13.5	-10	180	0.035	-0.001	16.0
273040	0.168	7.6	-10	-10	0.039	0.01	11.0
273041	0.177	30.5	-10	-10	0.049	-0.001	9.4
273042	0.062	3.8	-10	10	0.035	-0.001	4.7
273043	0.032	10.5	-10	80	0.036	-0.001	1.4
273044	0.047	4.8	-10	80	0.014	-0.001	1.5
273045	0.173	1.4	-10	-10	0.001	-0.001	3.2
273046	0.094	13.5	220	-10	0.013	-0.001	9.3
273047	0.387	61.0	-10	-10	0.037	-0.001	25.5
273048	0.098	4.7	70	-10	-0.001	-0.001	5.1
273049	0.079	19.5	-10	50	-0.001	-0.001	3.3
273050	0.168	24.5	-10	-10	-0.001	-0.001	5.5
273051	0.174	21.5	-10	-10	-0.001	-0.001	13.5
273052	0.150	32.5	-10	-10	0.013	0.002	12.5
273053	0.106	51.0	-10	-10	-0.001	0.002	9.0
273054	0.051	16.5	-10	-10	-0.001	-0.001	0.8
273055	0.037	12.5	270	-10	0.077	-0.001	0.0
273056	0.015	7.6	1080	50	0.062	-0.001	0.0
273057	0.059	5.5	3140	160	0.023	-0.001	0.0
273058	0.039	16.5	1800	140	0.219	-0.001	0.0
273059	0.022	6.8	960	80	0.006	-0.001	0.0
273061	0.039	20.5	-10	-10	-0.001	-0.001	1.0
273062	0.119	32.0	-10	-10	-0.001	-0.001	8.0
273063	0.132	20.5	-10	-10	-0.001	-0.001	7.6
273064	0.028	4.7	-10	-10	-0.001	-0.001	0.8
273065	0.047	26.5	380	40	0.030	-0.001	0.8
273066	0.042	23.0	100	180	0.020	-0.001	1.4
273067	0.078	65.0	100	140	0.040	0.003	3.8
273068	0.071	15.5	10	-10	0.018	0.003	5.8
273069	0.048	14.0	190	100	0.017	-0.001	0.7
273070	0.074	21.0	80	-10	0.029	0.001	3.5
273071	0.071	16.0	610	-10	0.032	-0.001	1.8
273072	0.046	17.5	50	30	0.026	0.001	1.2
273073	0.360	31.5	-10	180	0.012	0.005	15.5
273074	0.181	58.0	220	20	0.069	0.001	11.0
273075	0.135	8.5	60	-10	0.011	0.004	7.4
273076	0.078	29.5	360	-10	0.024	0.002	2.7
273077	0.087	13.5	-10	120	0.013	0.001	2.4
273078	0.132	93.0	340	70	0.032	0.008	6.7

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273079	0.310	30.0	50	90	0.010	0.007	14.5
273080	0.071	30.0	-10	-10	0.016	0.003	3.5
273081	0.096	33.5	-10	90	0.025	0.002	3.6
273082	0.039	22.5	40	-10	0.012	-0.001	0.7
273083	0.040	28.0	460	-10	0.027	-0.001	0.8
273084	0.047	11.0	310	-10	0.028	-0.001	0.7
273085	0.039	11.0	190	40	0.018	0.001	0.7
273086	0.089	25.5	100	120	0.012	0.002	4.5
273087	0.041	8.2	-10	-10	0.008	0.002	2.5
273088	0.095	30.5	-10	-10	0.026	-0.001	4.2
273089	0.036	6.3	550	280	0.040	-0.001	0.1
273090	0.055	15.5	380	70	0.016	-0.001	2.3
273091	0.052	25.0	340	-10	0.025	-0.001	1.4
273092	0.031	3.9	1930	80	0.085	-0.001	0.0
273093	0.081	24.0	-10	-10	0.022	-0.001	2.8
273094	0.085	50.5	370	-10	0.022	-0.001	6.3
273095	0.022	29.5	960	80	0.092	-0.001	0.0
273096	0.026	20.5	940	30	0.113	-0.001	0.0
273097	0.041	15.5	2300	190	0.157	-0.001	0.0
273099	0.040	14.0	1120	10	0.122	-0.001	0.1
273100	0.038	15.5	2380	-10	0.198	-0.001	0.1
273101	0.032	21.0	1880	-10	0.210	-0.001	0.0
273102	0.024	21.5	280	-10	0.125	-0.001	0.1
273103	0.067	15.5	-10	-10	0.022	-0.001	1.1
273104	0.034	6.1	730	-10	0.020	-0.001	0.7
273105	0.037	14.0	-10	90	0.038	-0.001	4.1
273106	0.034	6.2	-10	110	0.009	-0.001	1.6
273107	0.065	13.0	-10	-10	0.023	-0.001	3.1
273108	0.016	5.3	70	-10	0.016	-0.001	0.6
273109	0.051	19.0	470	100	0.014	0.001	2.4
273110	0.055	6.1	-10	-10	0.006	0.002	3.8
273111	0.091	20.0	10	-10	0.006	0.002	9.6
273112	0.206	122.5	-10	-10	0.082	0.002	7.1
273113	0.148	42.0	-10	140	0.021	0.003	9.2
273114	0.053	24.5	330	-10	0.015	0.002	2.5
273115	0.069	12.5	680	50	0.010	-0.001	1.5
273116	0.088	0.6	20	-10	-0.001	-0.001	2.0
273117	0.093	15.0	-10	-10	0.011	-0.001	3.9
273118	0.131	16.5	-10	-10	0.013	-0.001	9.3
273119	0.122	6.3	-10	-10	0.009	-0.001	6.7
273120	0.077	2.0	-10	-10	-0.001	0.002	4.5
273121	0.054	16.5	-10	50	0.019	-0.001	1.4
273122	0.119	2.5	-10	100	0.002	-0.001	5.9

MMI Soil assay results

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273123	0.172	6.1	-10	-10	0.017	-0.001	5.7
273124	0.063	2.0	-10	-10	0.008	-0.001	2.6
273125	0.079	17.0	780	-10	0.093	-0.001	0.1
273126	0.075	5.9	220	-10	0.017	-0.001	1.5
273127	0.048	41.5	2070	80	0.089	-0.001	1.1
273128	0.044	19.5	1890	190	0.133	-0.001	0.1
273129	0.044	9.6	4190	80	0.086	-0.001	0.2
273130	0.051	10.5	2510	170	0.072	-0.001	0.1
273131	0.058	135.0	1340	190	0.045	-0.001	1.6
273132	0.052	49.0	1660	70	0.042	-0.001	3.0
273133	0.048	33.0	1390	200	0.038	-0.001	0.7
273134	0.044	17.0	1460	80	0.040	0.003	0.4
273135	0.060	38.5	960	-10	0.076	-0.001	0.3
273136	0.056	68.0	1180	30	0.079	-0.001	0.4
273137	0.044	40.0	450	190	0.053	-0.001	0.3
273138	0.051	109.5	700	150	0.146	-0.001	0.0
273139	0.045	27.0	1900	-10	0.154	-0.001	0.0
273140	0.065	16.0	1070	-10	0.056	-0.001	0.1
273141	0.040	15.5	1300	-10	0.118	-0.001	0.0
273142	0.040	7.0	1220	-10	0.053	-0.001	0.0
273143	0.080	17.5	2200	240	0.229	-0.001	0.0
273144	0.061	34.5	1190	140	0.151	-0.001	0.0
273145	0.055	22.5	2000	210	0.041	-0.001	0.9
273146	0.060	9.3	570	-10	0.058	-0.001	0.6
273147	0.046	23.5	820	190	0.140	-0.001	0.1
273148	0.050	18.5	2240	120	0.022	0.002	1.0
273149	0.024	11.0	970	90	0.023	0.001	0.3
273150	0.032	34.5	200	-10	0.026	0.001	0.6
273151	0.039	16.5	-10	-10	0.026	0.002	1.9
273152	0.189	5.5	60	-10	0.022	0.003	11.5
273153	0.101	16.5	-10	40	0.012	0.002	5.0
273154	0.008	9.7	1750	250	0.079	0.002	0.0
273155	0.072	57.0	1440	300	0.061	-0.001	0.1
273156	0.008	14.0	210	140	0.087	-0.001	0.0
273157	0.056	19.5	140	-10	0.060	-0.001	1.1
273158	0.122	6.5	190	50	0.085	-0.001	4.2
273159	0.134	8.7	190	20	0.079	-0.001	0.0
273160	0.098	8.8	200	150	0.078	-0.001	0.1
273161	0.091	7.5	260	80	0.119	-0.001	0.0
273162	0.088	8.9	-10	-10	0.100	-0.001	0.3
273163	0.065	70.0	120	70	0.108	-0.001	4.2
273164	0.028	7.2	270	-10	0.047	-0.001	0.6
273165	0.019	14.5	190	80	0.090	-0.001	0.0

MMI Soil assay results

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273166	0.858	38.0	320	-10	0.091	-0.001	0.6
273167	0.004	20.5	430	150	0.114	-0.001	0.0
273168	0.014	24.0	370	220	0.091	-0.001	0.0
273169	0.013	18.0	360	210	0.178	-0.001	0.1
273170	0.036	43.5	440	30	0.222	-0.001	0.0
273171	0.030	36.0	220	-10	0.052	-0.001	0.8
273174	0.102	5.9	-10	-10	0.016	-0.001	6.8
273175	0.046	1.7	-10	-10	0.007	-0.001	3.8
273176	0.013	7.0	-10	-10	0.016	-0.001	1.8
273177	0.023	7.4	-10	-10	0.018	-0.001	2.9
273178	0.070	16.5	-10	-10	0.020	-0.001	19.5
273179	0.022	8.3	-10	-10	0.024	-0.001	3.8
273180	0.024	31.5	-10	-10	0.035	-0.001	1.8
273181	0.013	10.0	-10	-10	0.102	-0.001	3.4
273182	0.005	5.5	60	-10	0.169	-0.001	0.0
273183	0.014	3.0	-10	-10	0.022	-0.001	1.5
273184	0.025	9.9	-10	-10	0.019	-0.001	3.0
273185	0.025	6.2	-10	-10	0.020	-0.001	6.8
273186	0.033	23.0	150	-10	0.015	-0.001	0.9
273187	0.041	6.5	60	-10	0.009	-0.001	0.7
273188	0.105	46.0	-10	-10	0.017	-0.001	6.2
273189	0.071	16.0	110	-10	0.014	-0.001	5.1
273190	0.063	30.5	-10	-10	0.011	-0.001	4.1
273191	0.077	54.0	-10	-10	0.023	-0.001	8.9
273192	0.019	3.4	-10	-10	0.007	-0.001	0.9
273193	0.020	6.8	-10	-10	0.007	-0.001	0.8
273194	0.051	33.0	-10	-10	0.019	-0.001	3.9
273195	0.032	6.5	-10	-10	0.007	-0.001	1.8
273196	0.045	12.5	50	-10	0.016	-0.001	2.8
273197	0.041	21.0	160	-10	0.013	-0.001	1.2
273198	0.049	6.6	-10	-10	0.006	-0.001	1.1
273199	0.045	8.8	140	-10	0.023	-0.001	0.3
273200	0.163	43.5	1670	-10	0.189	-0.001	6.6
273201	0.048	23.5	1210	-10	0.019	-0.001	0.9
273202	0.026	39.5	900	-10	0.022	-0.001	0.2
273203	0.030	19.5	1560	-10	0.049	-0.001	0.7
273204	0.057	26.5	1760	-10	0.132	-0.001	0.6
273205	0.032	16.5	2770	-10	0.087	-0.001	0.0
273206	0.031	6.1	7230	-10	0.029	-0.001	0.0
273207	0.048	7.3	6030	-10	0.033	-0.001	0.0
273208	0.038	21.5	760	-10	0.113	-0.001	0.0
273209	0.013	8.5	1150	-10	0.070	-0.001	0.0
273210	0.047	9.8	2110	-10	0.052	-0.001	0.1

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273211	0.096	15.5	630	-10	0.041	-0.001	0.1
273212	0.085	46.0	-10	-10	0.029	-0.001	11.5
273213	0.047	54.0	220	-10	0.112	-0.001	2.0
273214	0.132	17.0	590	60	0.068	-0.001	0.1
273215	0.098	12.0	1420	-10	0.064	-0.001	0.1
273216	0.148	8.2	710	-10	0.037	-0.001	0.1
273217	0.097	10.5	490	60	0.049	-0.001	0.0
273218	0.060	9.1	1090	110	0.074	-0.001	0.0
273219	0.066	12.5	950	-10	0.094	-0.001	0.1
273220	0.056	42.5	840	-10	0.076	-0.001	0.1
273221	0.108	88.0	130	-10	0.020	0.003	5.4
273222	0.116	19.5	-10	-10	0.011	0.001	6.8
273223	0.251	23.5	60	-10	0.013	-0.001	5.5
273224	0.161	16.0	1240	280	0.015	-0.001	2.4
273225	0.211	16.0	600	-10	0.023	-0.001	9.6
273226	0.088	9.3	980	110	0.012	-0.001	1.7
273227	0.196	27.0	410	80	0.013	-0.001	2.7
273228	0.198	30.0	160	-10	0.013	-0.001	10.5
273229	0.238	43.5	-10	70	0.011	-0.001	5.5
273230	0.177	20.5	5130	250	0.042	-0.001	0.4
273231	0.169	58.5	-10	20	0.014	0.004	5.9
273232	0.292	72.5	620	100	0.018	0.002	17.5
273233	0.385	63.5	1670	110	0.171	0.002	9.9
273234	2.000	0.0	-10	20	0.403	-0.001	21.5
273235	0.367	219.0	890	50	0.276	-0.001	0.5
273236	0.453	57.5	2810	210	0.062	0.009	26.5
273237	0.210	178.0	-10	10	0.250	0.005	6.7
273238	0.038	24.0	90	-10	0.022	0.002	0.9
273239	0.080	36.5	410	-10	0.025	-0.001	1.7
273240	0.117	5.0	230	40	0.050	-0.001	1.5
273241	0.283	46.0	480	10	0.035	-0.001	0.8
273242	0.067	56.0	160	-10	0.018	-0.001	8.8
273243	0.179	200.0	2440	360	0.217	-0.001	1.5
273244	0.891	132.5	740	90	0.273	0.002	12.5
273245	0.202	100.0	2370	120	0.236	-0.001	2.2
273246	0.140	41.0	-10	-10	0.014	-0.001	3.3
273247	0.160	29.5	-10	-10	0.014	-0.001	3.5
273248	0.315	117.0	-10	70	0.021	-0.001	38.5
273249	0.103	25.5	1730	190	0.063	-0.001	0.4
273250	0.117	23.0	500	-10	0.093	-0.001	0.0
273251	0.177	20.0	200	-10	0.124	-0.001	1.5
273252	0.064	3.8	230	30	0.016	-0.001	0.8
273253	0.130	5.5	-10	-10	0.007	-0.001	0.9

MMI Soil assay results

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273254	0.147	5.5	-10	-10	0.007	-0.001	3.9
273255	0.134	8.8	-10	-10	0.007	-0.001	4.1
273256	0.183	34.0	200	-10	0.010	-0.001	3.6
273257	0.438	7.7	-10	-10	0.008	-0.001	0.9
273258	0.226	6.4	-10	-10	0.005	-0.001	0.8
273259	0.260	8.6	-10	10	0.007	-0.001	1.2
273260	0.145	8.3	140	-10	0.013	-0.001	0.4
273261	0.298	3.2	80	-10	0.016	-0.001	0.4
273262	0.370	8.9	330	-10	0.012	-0.001	3.3
273263	0.371	5.1	-10	-10	0.006	-0.001	2.5
273264	0.210	4.2	40	-10	0.006	-0.001	0.7
273265	0.264	3.2	-10	-10	0.005	-0.001	0.8
273266	0.257	5.5	-10	-10	0.007	-0.001	1.1
273267	0.265	4.2	-10	-10	0.007	-0.001	0.9
273268	0.214	4.9	-10	-10	0.007	-0.001	0.7
273269	0.268	14.0	-10	10	0.010	-0.001	6.3
273270	0.039	5.6	10	20	0.007	-0.001	1.0
273271	0.021	2.3	-10	-10	0.008	-0.001	0.8
273272	0.020	3.2	-10	-10	0.005	-0.001	0.8
273273	0.034	5.7	30	-10	0.011	-0.001	1.7
273274	0.020	3.5	-10	-10	0.013	-0.001	0.6
273275	0.039	4.7	130	-10	0.010	-0.001	0.4
273276	0.038	5.1	-10	-10	0.008	-0.001	1.1
273277	0.032	23.5	670	20	0.060	-0.001	0.8
273278	0.010	4.9	1120	20	0.024	-0.001	0.3
273279	0.027	7.4	760	-10	0.026	-0.001	0.0
273280	0.008	4.3	980	40	0.012	-0.001	0.5
273281	0.025	5.7	1120	20	0.005	-0.001	5.7
273282	0.023	11.5	450	-10	0.014	-0.001	8.4
273283	0.028	8.1	500	-10	0.017	-0.001	1.4
273284	0.033	18.5	10	-10	0.016	-0.001	1.1
273285	0.011	8.6	1130	130	0.037	-0.001	0.0
273286	0.061	9.6	330	-10	0.090	-0.001	0.3
273287	0.012	2.4	4770	240	0.036	-0.001	0.1
273288	0.022	7.8	260	10	0.009	-0.001	2.0
273289	0.082	40.5	330	-10	0.089	-0.001	3.8
273290	0.106	9.2	430	110	0.027	-0.001	5.7
273291	0.038	23.0	610	250	0.021	-0.001	3.2
273292	0.014	20.5	1930	290	0.087	-0.001	0.1
273293	0.056	19.5	1070	230	0.062	0.007	5.0
273294	0.020	11.0	2500	260	0.043	-0.001	0.6
273295	0.014	11.0	1980	210	0.061	-0.001	0.3
273296	0.107	23.0	610	190	0.022	-0.001	8.9

MMI Soil assay results

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273297	0.037	18.0	100	190	0.015	-0.001	7.6
273298	0.124	24.5	350	-10	0.083	-0.001	3.7
273299	0.050	5.5	520	-10	0.044	-0.001	3.4
273300	0.032	10.5	360	100	0.033	-0.001	3.3
273301	0.002	8.9	670	90	0.015	-0.001	15.0
273302	0.143	13.5	-10	30	0.037	-0.001	20.5
273303	0.159	8.5	300	110	0.022	-0.001	33.5
273304	0.287	25.5	220	70	0.028	-0.001	9.7
273305	-0.001	10.0	330	90	0.025	-0.001	7.8
273306	0.019	18.5	1020	-10	0.035	-0.001	7.1
273307	0.060	32.0	390	-10	0.041	-0.001	15.5
273308	-0.001	9.0	440	60	0.020	-0.001	1.8
273309	-0.001	31.5	400	20	0.039	-0.001	4.5
273310	0.006	41.5	120	140	0.024	-0.001	7.5
273311	-0.001	5.7	510	100	0.019	-0.001	3.7
273312	-0.001	25.5	-10	30	0.032	-0.001	9.5
273313	-0.001	25.0	380	70	0.027	-0.001	4.3
273314	-0.001	9.8	740	70	0.017	-0.001	1.8
273315	-0.001	17.5	360	60	0.028	-0.001	2.2
273316	-0.001	12.5	1180	60	0.036	-0.001	1.4
273317	-0.001	21.5	1710	60	0.064	-0.001	0.6
273318	-0.001	16.5	1930	70	0.137	-0.001	1.1
273319	0.017	30.5	1370	140	0.251	-0.001	1.6
273320	-0.001	23.0	2010	90	0.252	-0.001	0.5
273321	-0.001	19.5	3450	250	0.292	-0.001	0.9
273322	0.056	49.5	1220	160	0.235	-0.001	0.4
273323	0.013	51.0	280	40	0.039	-0.001	6.3
273324	-0.001	7.7	790	110	0.022	-0.001	5.8
273325	-0.001	7.2	1200	50	0.032	-0.001	0.6
273326	0.008	3.5	1400	250	0.058	-0.001	0.0
273327	0.013	5.8	1410	70	0.038	-0.001	0.6
273328	0.047	6.3	7340	550	0.048	-0.001	2.0
273329	0.017	5.1	1600	210	0.107	-0.001	0.3
273330	0.250	15.0	1540	10	0.243	0.014	3.5
273331	0.065	7.3	-10	-10	0.021	0.003	4.7
273332	0.041	5.0	-10	-10	0.014	-0.001	2.7
273333	-0.001	1.1	480	30	0.010	-0.001	0.5
273334	0.003	1.3	340	30	0.011	-0.001	0.9
273335	0.081	14.0	220	40	0.036	-0.001	2.9
273336	0.108	12.5	450	-10	0.035	-0.001	2.5
273337	0.092	10.5	500	60	0.038	-0.001	4.5
273338	0.045	3.1	210	20	0.016	-0.001	1.2
273339	0.044	1.9	170	20	0.023	-0.001	1.2

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273340	0.050	4.2	410	40	0.023	-0.001	2.1
273341	0.020	3.6	380	-10	0.026	-0.001	1.2
273342	0.004	4.6	1330	40	0.203	-0.001	0.0
273343	0.023	6.4	1190	-10	0.276	-0.001	0.1
273344	-0.001	2.1	4490	350	0.090	-0.001	0.1
273345	0.005	7.8	530	20	0.048	-0.001	0.7
273346	0.021	2.0	4850	250	0.064	0.002	0.3
273347	-0.001	4.8	1520	40	0.076	-0.001	0.0
273348	-0.001	5.7	1490	80	0.109	-0.001	0.1
273349	-0.001	2.7	960	20	0.031	-0.001	0.4
273350	0.021	8.0	700	-10	0.083	-0.001	0.1
273351	0.046	4.3	1900	130	0.090	-0.001	0.1
273352	0.028	10.5	650	-10	0.169	-0.001	0.0
273353	0.044	7.7	320	-10	0.035	-0.001	1.0
273354	0.016	2.3	40	-10	0.006	-0.001	1.3
273355	0.029	6.5	70	-10	0.005	-0.001	1.2
273356	0.028	13.5	2160	50	0.029	0.003	1.2
273357	0.012	1.2	250	-10	0.009	-0.001	0.7
273358	0.092	18.5	1520	-10	0.060	-0.001	3.7
273359	0.205	36.0	3170	110	0.085	0.002	6.6
273360	0.037	32.5	2110	100	0.077	-0.001	0.4
273361	0.010	6.9	1300	-10	0.019	-0.001	0.7
273362	0.013	10.0	1730	-10	0.028	-0.001	0.0
273363	0.024	12.5	1280	-10	0.072	-0.001	0.0
273364	0.012	12.5	1220	-10	0.068	-0.001	0.0
273365	0.020	17.0	1120	-10	0.081	-0.001	0.0
273366	0.044	48.0	1130	-10	0.045	-0.001	3.2
273367	0.024	32.5	2580	-10	0.113	-0.001	0.1
273368	0.013	16.0	2540	-10	0.083	-0.001	0.1
273369	0.027	23.0	2350	-10	0.081	-0.001	0.0
273370	0.037	47.0	3220	-10	0.071	0.004	2.9
273371	0.053	30.5	2880	-10	0.154	0.009	2.2
273372	0.090	25.0	4990	110	0.135	0.024	3.6
273373	0.357	0.9	4170	180	0.036	0.01	1.8
273374	0.172	42.5	630	-10	0.175	0.003	0.3
273375	0.249	32.5	690	-10	0.070	0.009	5.4
273376	0.064	17.5	1670	-10	0.131	0.001	0.0
273377	0.036	37.0	1120	-10	0.033	-0.001	6.5
273378	0.029	15.5	90	-10	0.012	-0.001	7.1
273379	0.020	21.5	3220	-10	0.077	-0.001	0.1
273380	0.104	25.0	390	-10	0.133	0.03	3.2
273381	0.060	34.0	2340	-10	0.106	0.006	0.2
273382	0.027	24.0	680	70	0.023	-0.001	0.7

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273383	0.053	23.5	680	20	0.021	-0.001	2.3
273384	0.125	64.5	1730	110	0.124	-0.001	6.5
273385	0.088	20.5	990	50	0.031	-0.001	0.3
273386	0.074	20.0	2220	180	0.047	-0.001	0.3
273387	0.048	20.5	970	60	0.052	-0.001	1.0
273388	0.070	48.5	-10	-10	0.018	-0.001	17.5
273389	0.074	30.5	-10	10	0.015	-0.001	9.8
273390	0.071	29.5	500	-10	0.022	-0.001	6.9
273391	0.050	4.6	370	-10	0.011	-0.001	0.3
273392	0.107	13.5	1010	40	0.023	-0.001	0.3
273393	0.135	17.0	650	-10	0.015	-0.001	7.7
273394	0.128	47.0	260	10	0.025	-0.001	9.9
273395	0.155	48.0	450	20	0.020	-0.001	13.5
273396	0.119	35.5	170	-10	0.025	-0.001	5.9
273397	0.130	51.5	3830	100	0.092	-0.001	5.8
273398	0.070	22.0	1150	50	0.150	-0.001	0.1
273399	0.160	9.8	340	-10	0.085	-0.001	0.4
273400	0.192	10.0	450	-10	0.085	-0.001	0.6
273401	0.110	15.0	580	-10	0.022	-0.001	1.2
273402	0.067	32.5	210	-10	0.015	-0.001	10.5
273403	0.079	37.5	590	-10	0.020	-0.001	22.0
273404	0.108	17.5	680	10	0.013	-0.001	9.3
273405	0.110	12.5	370	20	0.012	-0.001	7.9
273406	0.046	13.0	460	-10	0.019	-0.001	2.4
273407	0.081	17.0	90	30	0.016	-0.001	17.0
273408	0.068	39.0	390	30	0.018	-0.001	22.0
273409	0.055	25.0	20	40	0.018	-0.001	4.8
273410	0.062	28.0	950	350	0.024	-0.001	4.9
273411	0.036	23.5	640	310	0.020	-0.001	2.2
273412	0.076	80.5	70	240	0.021	-0.001	15.0
273413	0.037	25.5	690	150	0.023	-0.001	7.0
273414	0.038	43.5	2420	270	0.120	0.004	8.5
273415	0.066	38.5	780	220	0.021	0.001	6.0
273416	0.041	37.5	440	120	0.026	0.001	13.0
273417	0.079	37.5	770	180	0.020	0.002	17.5
273418	0.134	69.5	290	90	0.018	0.001	21.0
273419	0.047	33.5	1260	200	0.029	-0.001	7.8
273420	0.046	39.0	810	90	0.160	-0.001	0.1
273421	0.069	43.0	1380	260	0.166	0.001	2.0
273422	0.032	12.5	1570	240	0.015	-0.001	2.5
273423	0.059	30.0	390	250	0.018	-0.001	5.8
273424	0.159	76.0	380	110	0.034	-0.001	20.5
273425	0.059	51.0	1400	180	0.061	-0.001	2.5

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273426	0.030	4.5	3880	340	0.032	-0.001	0.7
273427	0.024	18.5	1730	250	0.023	-0.001	1.9
273428	0.024	3.7	800	180	0.008	-0.001	4.4
273429	0.033	13.0	320	160	0.019	-0.001	3.3
273430	0.019	1.5	1400	210	0.004	-0.001	0.9
273431	0.083	22.0	990	150	0.081	-0.001	0.0
273432	0.263	13.5	1130	200	0.085	-0.001	3.3
273433	0.308	68.5	1110	250	0.245	0.02	4.3
273434	0.190	77.0	830	150	0.164	-0.001	3.1
273435	0.072	47.5	2150	210	0.158	-0.001	1.6
273436	0.007	6.3	680	130	0.015	-0.001	1.0
273437	0.054	43.5	2290	110	0.115	-0.001	4.9
273438	0.052	17.5	560	30	0.017	-0.001	1.9
273439	0.094	8.0	50	30	0.007	-0.001	0.9
273440	0.101	19.0	390	100	0.013	-0.001	3.4
273441	0.031	4.9	850	40	0.011	0.002	1.0
273442	0.021	14.5	560	60	0.022	-0.001	2.2
273443	0.030	6.4	4010	250	0.031	-0.001	7.4
273444	0.023	14.0	1010	150	0.019	-0.001	4.4
273445	0.019	5.9	540	40	0.012	-0.001	2.3
273446	0.109	41.5	1560	70	0.028	-0.001	9.1
273447	0.032	4.9	1400	140	0.036	-0.001	0.6
273448	0.019	2.9	1540	120	0.011	-0.001	2.4
273449	0.089	25.5	1000	40	0.051	-0.001	0.3
273450	0.070	40.0	860	120	0.055	-0.001	5.2
273451	0.147	51.0	1390	210	0.121	-0.001	4.9
273452	0.020	3.5	2600	90	0.016	-0.001	0.8
273453	0.068	35.0	1980	160	0.070	-0.001	2.6
273454	0.186	3.9	-10	-10	0.002	-0.001	8.5
273455	0.060	8.3	60	50	0.008	-0.001	6.1
273456	0.034	5.9	610	80	0.011	-0.001	1.9
273457	0.035	8.5	1190	120	0.025	-0.001	2.4
273458	0.051	5.1	1020	-10	0.015	-0.001	11.5
273459	0.108	10.0	110	-10	0.011	-0.001	5.4
273460	0.097	12.0	20	-10	0.010	-0.001	3.1
273461	0.130	5.7	-10	-10	0.006	-0.001	4.9
273462	0.103	8.0	370	-10	0.012	-0.001	2.6
273463	0.219	17.0	530	90	0.020	-0.001	2.3
273464	0.156	28.5	60	-10	0.017	-0.001	7.9
273465	0.129	21.0	-10	-10	0.009	-0.001	8.6
273466	0.034	9.9	80	40	0.009	-0.001	5.4
273467	0.036	11.5	40	-10	0.007	-0.001	2.9
273468	0.020	2.8	250	130	0.004	-0.001	1.2

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
273469	0.164	15.0	4720	290	0.042	-0.001	4.5
273470	0.178	31.5	2470	310	0.145	-0.001	5.8
273471	0.205	23.5	400	120	0.007	-0.001	11.0
273472	0.190	4.7	150	-10	0.003	-0.001	10.0
273473	0.259	7.8	150	20	0.015	-0.001	13.5
273474	0.117	1.0	110	-10	0.001	-0.001	7.8
273475	0.139	10.5	20	-10	0.003	-0.001	10.0
273476	0.114	0.6	40	-10	-0.001	-0.001	4.6
273477	0.018	0.3	40	-10	-0.001	-0.001	0.3
273478	0.040	1.7	110	-10	-0.001	-0.001	1.1
273479	1.100	2.8	370	-10	0.012	-0.001	7.1
273480	0.144	2.0	-10	-10	0.003	-0.001	9.0
273481	0.095	35.0	100	-10	0.009	-0.001	8.2
273482	0.125	20.5	280	-10	0.014	-0.001	10.0
273483	0.242	16.5	100	-10	0.010	-0.001	14.5
273484	0.086	4.5	-10	20	0.003	-0.001	8.2
273485	0.167	0.5	80	-10	0.001	-0.001	4.5
273486	0.108	4.3	120	-10	0.007	-0.001	10.5
273487	0.084	2.5	-10	-10	0.003	-0.001	5.3
273488	0.085	1.7	-10	30	0.004	-0.001	4.8
273489	0.192	6.8	160	-10	0.006	-0.001	8.9
273490	0.118	10.0	-10	-10	0.007	-0.001	9.9
273491	0.110	9.0	60	-10	0.008	-0.001	8.2
273492	0.175	3.3	150	-10	0.007	-0.001	7.8
273493	0.140	13.0	-10	-10	0.004	-0.001	4.3
273494	0.258	2.6	80	-10	0.006	-0.001	7.1
273495	0.145	3.4	20	-10	0.007	-0.001	6.6
273496	0.126	8.9	-10	-10	0.004	-0.001	4.8
273497	0.368	1.4	60	-10	0.007	-0.001	2.2
273498	0.390	4.7	-10	-10	0.017	-0.001	13.5
273499	0.026	4.0	120	-10	0.004	-0.001	3.4
273500	0.180	10.5	-10	-10	0.005	-0.001	9.4
273501	0.094	19.0	50	-10	0.009	-0.001	4.2
273502	0.038	4.4	80	-10	0.006	-0.001	2.2
273503	0.071	19.0	310	-10	0.004	-0.001	6.1
273504	0.136	3.2	-10	-10	0.002	-0.001	2.4
274201	0.100	36.0	-10	-10	0.030	-0.001	5.4
274202	0.087	50.0	-10	-10	0.033	-0.001	5.9
274203	0.016	8.8	-10	40	0.036	-0.001	0.0
274204	0.029	24.0	-10	-10	0.030	-0.001	0.7
274205	0.034	21.5	-10	-10	0.023	-0.001	1.3
274206	0.180	30.0	-10	-10	0.115	-0.001	0.6
274207	0.058	16.5	-10	-10	0.023	-0.001	0.6

MMI Soil assay results

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
274208	0.062	24.0	-10	-10	0.016	-0.001	3.5
274209	0.049	4.0	-10	-10	0.011	0.003	1.1
274210	0.045	26.0	-10	-10	0.016	-0.001	2.1
274211	0.253	6.8	-10	-10	0.096	-0.001	0.0
274212	0.416	21.0	-10	-10	0.095	-0.001	0.2
274213	0.024	29.0	-10	-10	0.158	-0.001	0.0
274214	0.380	44.5	-10	-10	0.018	-0.001	1.0
274215	0.440	38.5	-10	90	0.019	-0.001	1.3
274216	0.147	46.5	-10	-10	0.064	-0.001	0.3
274217	0.029	8.5	-10	-10	0.009	-0.001	0.7
274218	0.058	23.5	-10	-10	0.092	-0.001	0.0
274219	0.103	42.5	-10	-10	0.265	-0.001	0.3
274220	0.076	58.5	-10	-10	0.030	0.003	2.4
274221	0.072	12.5	-10	190	0.025	-0.001	0.7
274222	0.034	16.0	-10	50	0.013	-0.001	0.9
274224	0.207	31.5	-10	-10	0.049	0.001	1.4
274225	0.279	24.5	-10	80	0.101	-0.001	0.0
274226	0.093	19.0	-10	-10	0.028	-0.001	0.7
274227	0.299	8.6	440	-10	0.123	-0.001	0.0
274228	0.033	11.0	-10	-10	0.005	-0.001	1.7
274229	0.025	8.8	-10	-10	0.015	-0.001	0.8
274230	0.085	35.5	-10	-10	0.048	-0.001	9.4
274231	-0.001	9.3	-10	-10	0.078	-0.001	0.0
274232	0.082	22.0	-10	110	0.156	-0.001	0.0
274233	0.075	198.5	-10	-10	0.059	-0.001	1.1
274234	0.049	30.0	-10	-10	0.019	-0.001	2.0
274235	0.038	17.0	-10	-10	0.021	-0.001	0.6
274236	0.334	3.0	-10	270	0.028	-0.001	0.0
274237	0.231	7.4	-10	-10	0.104	-0.001	0.1
274238	0.044	5.2	-10	-10	0.010	-0.001	0.7
274239	0.043	69.0	-10	-10	0.041	-0.001	0.9
274240	0.099	22.0	-10	-10	0.027	-0.001	0.0
274241	0.138	53.0	-10	-10	0.073	-0.001	5.4
274242	0.037	16.0	-10	190	0.024	-0.001	0.8
274243	0.045	8.9	-10	-10	0.026	-0.001	1.4
274244	0.029	8.2	-10	60	0.026	-0.001	0.6
274245	0.068	209.5	-10	10	0.106	-0.001	4.5
274246	0.111	13.5	-10	210	0.111	-0.001	0.0
274247	0.159	23.0	-10	-10	0.042	-0.001	7.8
274248	0.030	16.0	-10	-10	0.018	-0.001	1.5
274249	0.058	34.0	-10	50	0.025	-0.001	0.6
274250	0.036	12.5	-10	100	0.036	-0.001	0.0
274251	0.037	11.0	-10	-10	0.016	-0.001	1.2

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
274252	0.053	25.5	-10	-10	0.019	-0.001	2.1
274253	0.082	10.5	-10	60	0.150	0.018	3.6
274254	0.092	9.9	-10	30	0.124	-0.001	0.0
274255	0.026	16.5	-10	-10	0.024	-0.001	1.3
274257	0.028	40.0	-10	-10	0.023	-0.001	1.8
274258	0.053	26.5	-10	10	0.025	-0.001	0.2
274259	0.035	25.5	-10	-10	0.029	-0.001	2.2
274260	0.050	30.0	-10	-10	0.025	-0.001	4.1
274261	0.191	50.0	-10	-10	0.031	-0.001	9.7
274262	0.057	33.5	-10	30	0.037	-0.001	0.7
274263	0.041	31.5	130	80	0.032	-0.001	0.8
274264	0.014	40.0	-10	-10	0.048	-0.001	0.7
274265	0.099	5.7	-10	20	0.018	-0.001	4.6
274266	0.013	15.0	-10	60	0.018	-0.001	0.9
274267	0.127	7.0	-10	-10	0.018	-0.001	9.0
274268	0.248	29.5	-10	60	0.150	-0.001	0.0
274269	0.008	31.5	-10	50	0.032	-0.001	0.9
274270	-0.001	13.0	-10	90	0.015	-0.001	0.7
274271	0.050	60.5	-10	-10	0.367	-0.001	0.6
274272	0.010	38.0	-10	110	0.093	-0.001	0.3
274273	0.976	84.0	-10	-10	0.239	0.004	4.3
274274	0.042	17.5	-10	20	0.029	-0.001	1.0
274275	0.005	24.5	-10	80	0.048	-0.001	0.8
274276	0.032	45.5	-10	80	0.034	-0.001	2.4
274277	0.026	21.0	-10	-10	0.020	-0.001	2.3
274278	0.008	92.5	-10	40	0.086	-0.001	0.3
274279	0.012	23.0	-10	30	0.019	-0.001	0.7
274280	0.032	67.0	-10	30	0.091	-0.001	1.1
274281	0.286	117.0	-10	160	0.381	-0.001	0.9
274282	0.198	111.0	-10	-10	0.366	-0.001	0.0
274283	0.320	43.0	-10	-10	0.142	-0.001	0.3
274285	0.574	49.0	-10	150	0.128	0.002	1.1
274286	0.093	197.5	-10	-10	0.110	-0.001	0.2
274287	0.953	34.0	-10	290	0.148	-0.001	0.9
274288	0.571	25.5	-10	100	0.255	-0.001	0.3
274289	0.337	131.0	-10	100	0.436	-0.001	1.4
274290	0.317	138.0	-10	230	0.266	-0.001	0.7
274291	0.458	35.5	-10	130	0.172	-0.001	0.5
274292	0.031	56.5	-10	50	0.133	-0.001	0.2
274293	0.436	13.0	-10	230	0.125	-0.001	0.0
274294	0.214	78.0	-10	200	0.199	-0.001	0.1
274295	2.800	27.5	-10	80	0.140	-0.001	1.7
330302	0.028	6.0	-10	10	0.008	-0.001	0.3

Sample_No	Ni_ppm	Pb_ppm	Pd_ppt	Pt_ppt	Sb_ppm	Tl_ppm	Zn_ppm
330303	0.106	55.5	-10	80	0.015	-0.001	3.0
330304	0.224	168.5	-10	260	0.154	0.002	3.2
330305	0.086	32.5	-10	20	0.116	-0.001	1.1
330306	0.199	62.0	-10	-10	0.018	0.003	4.5
330307	0.102	39.0	-10	70	0.110	0.007	5.7
330308	0.433	118.0	-10	360	0.740	0.005	2.4
330309	0.045	38.0	-10	130	0.025	0.001	1.3
330310	0.045	52.0	-10	130	0.035	0.002	1.2
330313	0.028	35.5	-10	-10	0.011	0.004	1.2
330314	0.019	12.0	-10	150	0.034	0.003	0.5
330315	0.035	24.5	-10	50	0.015	0.002	2.0
330316	0.031	27.5	-10	80	0.014	-0.001	0.8
330317	0.059	38.5	-10	190	0.014	0.002	1.9
330318	0.075	37.0	-10	30	0.011	0.005	3.8
330319	0.249	241.0	-10	210	0.056	0.004	5.7
330320	0.059	56.0	-10	60	0.044	-0.001	1.0
330321	0.029	19.5	-10	100	0.009	0.001	1.6
330322	0.049	37.0	-10	50	0.009	-0.001	2.0
330324	0.174	54.0	-10	190	0.294	0.002	0.6
330325	0.032	37.5	10	#REF!	0.014	0.001	1.2

APPENDIX 4

BEATRICE PROSPECT

Drill Assay Results, MS7-MS10.

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS1-4	MS1	4	7.2	CORE								100				100		800
MS1-7.2	MS1	7.2	13.7	CORE								100				300		600
MS1-13.7	MS1	13.7	19.4	CORE								100				300		1100
274553	MS1	18.1	18.1	1/2 CORE														
MS1-19.4	MS1	19.4	25	CORE								100				800		2500
MS1-25	MS1	25	30	CORE								100				1200		3700
MS1-30	MS1	30	32	CORE								100				1700		2900
MS1-32	MS1	32	34	CORE								100				1500		5000
MS1-34	MS1	34	36	CORE								100				1200		3200
MS1-36	MS1	36	38	CORE								100				1000		4000
274547	MS1	36.3	36.3	1/2 CORE														
MS1-38	MS1	38	40	CORE								100				700		15000
MS1-40	MS1	40	42	CORE								100				400		3000
274548	MS1	40.6	40.6	1/2 CORE														
MS1-42	MS1	42	44	CORE								100				1800		3200
MS1-44	MS1	44	46	CORE								100				1300		1000
MS1-46	MS1	46	48	CORE								100				300		400
MS1-48	MS1	48	50	CORE								100				1100		600
MS1-50	MS1	50	52	CORE								100				2200		1700
MS1-52	MS1	52	54	CORE								100				4700		1900
MS1-54	MS1	54	56	CORE								200				15000		2400
274549	MS1	54.7	54.7	1/2 CORE														
MS1-56	MS1	56	58	CORE								100				1000		800
MS1-58	MS1	58	60	CORE								100				2000		2200
MS1-60	MS1	60	61	CORE								100				2800		8500
MS1-61	MS1	61	62	CORE								100				3000		8800
MS1-62	MS1	62	63	CORE								100				12800		17000
274550	MS1	62.8	62.8	1/2 CORE														
MS1-63	MS1	63	64	CORE								100				6200		15800
MS1-64	MS1	64	65	CORE								200				12500		16500
MS1-65	MS1	65	66	CORE								100				20000		13700
MS1-66	MS1	66	67	CORE								200				10200		24700
MS1-67	MS1	67	68	CORE								200				7400		24200
MS1-68	MS1	68	69	CORE								100				5500		3500
MS1-69	MS1	69	70	CORE								100				800		1100
MS1-70	MS1	70	72	CORE								100				1500		2300
MS1-72	MS1	72	74	CORE								100				700		1100
MS1-74	MS1	74	76	CORE								100				500		800

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS1-76	MS1	76	78	CORE								100				400		1000
274551	MS1	76	76	1/2 CORE														
MS1-78	MS1	78	80	CORE								100				300		500
MS1-80	MS1	80	85	CORE								100				200		300
MS1-85	MS1	85	90	CORE								100				200		300
MS1-90	MS1	90	96	CORE								100				200		300
MS1-96	MS1	96	97.1	CORE								100				100		100
MS1-97.1	MS1	97.1	98.5	CORE								100				700		1600
MS1-98.5	MS1	98.5	104	CORE								100				400		900
MS1-104	MS1	104	110	CORE								100				200		400
MS1-110	MS1	110	111	CORE								100				1300		1700
MS1-111	MS1	111	112	CORE								1400				30000		79000
MS1-112	MS1	112	113	CORE								1400				23000		22000
MS1-113	MS1	113	114	CORE								100				700		1900
MS1-114	MS1	114	115	CORE								100				900		500
MS1-115	MS1	115	116	CORE								100				800		1700
MS1-116	MS1	116	117	CORE								100				200		500
MS1-117	MS1	117	118	CORE								100				600		700
MS1-118	MS1	118	119	CORE								100				300		400
MS1-119	MS1	119	120	CORE								100				500		700
MS1-120	MS1	120	130	CORE								100				400		400
274901	MS1	120	122	1/2 CORE	4		-0.01					104				1165		1557
274902	MS1	122	124	1/2 CORE	-2		-0.01					5				922		506
274903	MS1	124	126	1/2 CORE	-2		-0.01					4				454		402
274904	MS1	126	128	1/2 CORE	-2		-0.01					8				182		290
274905	MS1	128	130	1/2 CORE	-2		-0.01					11				76		226
274906	MS1	130	132	1/2 CORE	-2		-0.01					5				58		185
MS1-130	MS1	130	140	CORE								100				100		200
274907	MS1	132	134	1/2 CORE	-2		-0.01					-4				44		214
274908	MS1	134	136	1/2 CORE	-2		-0.01					-4				49		168
274909	MS1	136	138	1/2 CORE	-2		-0.01					6				49		170
274910	MS1	138	140	1/2 CORE	-2		-0.01					-4				21		92
274911	MS1	140	142	1/2 CORE	-2		-0.01					-4				25		91
MS1-140	MS1	140	160	CORE								100				100		100
274912	MS1	142	144	1/2 CORE	-2		-0.01					-4				55		131
274913	MS1	144	146	1/2 CORE	-2		-0.01					13				74		173
274914	MS1	146	148	1/2 CORE	-2		-0.01					5				47		250
274915	MS1	148	150	1/2 CORE	-2		-0.01					5				86		316

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274916	MS1	150	152	1/2 CORE	-2		-0.01					-4				49		145
274917	MS1	152	154	1/2 CORE	-2		-0.01					0				53		112
274918	MS1	154	156	1/2 CORE	-2		-0.01					6				46		118
274919	MS1	156	158	1/2 CORE	-2		-0.01					6				32		103
274921	MS1	158	160	1/2 CORE	-2		-0.01					15				66		127
274922	MS1	160	162	1/2 CORE	-2		-0.01					6				50		174
MS1-160	MS1	160	170	CORE								100				200		400
274923	MS1	162	164	1/2 CORE	-2		-0.01					10				60		307
274924	MS1	164	166	1/2 CORE	-2		-0.01					8				101		536
274552	MS1	164.5	164.5	1/2 CORE														
274925	MS1	166	168	1/2 CORE	-2		-0.01					8				115		293
274926	MS1	168	170	1/2 CORE	-2		-0.01					10				254		827
274927	MS1	170	172	1/2 CORE	-2		-0.01					-4				161		433
MS1-170	MS1	170	180	CORE								100				300		700
274928	MS1	172	174	1/2 CORE	-2		-0.01					11				292		789
274929	MS1	174	176	1/2 CORE	-2		-0.01					29				121		376
274930	MS1	176	178	1/2 CORE	-2		-0.01					18				236		741
274931	MS1	178	180	1/2 CORE	-2		-0.01					33				505		985
MS1-180	MS1	180	190	CORE								100				200		700
274932	MS1	180	182	1/2 CORE	-2		-0.01					31				331		906
274933	MS1	182	184	1/2 CORE	-2		-0.01					10				305		793
274934	MS1	184	186	1/2 CORE	-2		-0.01					8				197		1287
274935	MS1	186	188	1/2 CORE	-2		-0.01					-4				135		448
274936	MS1	188	190	1/2 CORE	-2		-0.01					13				114		613
MS1-190	MS1	190	196.7	CORE								100				500		1100
274937	MS1	190	192	1/2 CORE	-2		-0.01					23				506		1158
274938	MS1	192	194	1/2 CORE	-2		-0.01					47				292		1019
274939	MS1	194	196.7	1/2 CORE	-2		-0.01					35				373		1461
MS1-196.7	MS1	196.7	200	CORE								100				100		200
274941	MS1	200	202	1/2 CORE	-2		-0.01					48				269		1218
MS1-200	MS1	200	205	CORE								100				1200		2300
274942	MS1	202	204	1/2 CORE	2		-0.01					86				1822		2101
274943	MS1	204	206	1/2 CORE	-2		-0.01					45				325		1891
MS1-205	MS1	205	210	CORE								100				1200		1100
274944	MS1	206	208	1/2 CORE	2		-0.01					49				137		619
274945	MS1	208	210	1/2 CORE	4		-0.01					58				1536		1547
274946	MS1	210	212	1/2 CORE	7		-0.01					69				5900		1626
MS1-210	MS1	210	215	CORE								100				1400		2600

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Be_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Mo_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274947	MS1	212	214	1/2 CORE	6		-0.01					71				2414		5930
274948	MS1	214	216	1/2 CORE	3		-0.01					44				1358		1554
MS1-215	MS1	215	220	CORE								100				600		700
274949	MS1	216	218	1/2 CORE	3		-0.01					13				120		87
274950	MS1	218	220	1/2 CORE	2		-0.01					12				78		203
274951	MS1	220	222	1/2 CORE	2		-0.01					41				179		310
MS1-220	MS1	220	225	CORE								100				300		600
274952	MS1	222	224	1/2 CORE	2		-0.01					34				150		168
274953	MS1	224	226	1/2 CORE	-2		-0.01					5				234		398
MS1-225	MS1	225	230	CORE								100				400		700
274954	MS1	226	228	1/2 CORE	-2		-0.01					-4				85		92
274955	MS1	228	230	1/2 CORE	-2		-0.01					5				467		1498
274956	MS1	230	232	1/2 CORE	2		-0.01					4				402		1189
MS1-230	MS1	230	235	CORE								100				600		1400
274957	MS1	232	234	1/2 CORE	-2		-0.01					-4				117		111
274958	MS1	234	236	1/2 CORE	2		-0.01					65				291		1199
MS1-235	MS1	235	240	CORE								100				500		2300
274959	MS1	236	238	1/2 CORE	2		-0.01					24				751		3066
274961	MS1	238	240	1/2 CORE	-2		-0.01					12				78		171
MS1-240	MS1	240	243.1	CORE								100				100		100
MS1-243.1	MS1	243.1	245	CORE								100				1100		1300
MS1-245	MS1	245	245.5	CORE								100				1900		2200
MS1-245.5	MS1	245.5	248.9	CORE								100				400		800
MS1-248.9	MS1	248.9	250	CORE								100				300		700
274962	MS1	250	252	1/2 CORE	2		-0.01					48				111		311
MS1-250	MS1	250	255	CORE								100				200		400
274963	MS1	252	254	1/2 CORE	3		-0.01					55				100		323
274964	MS1	254	256	1/2 CORE	2		-0.01					52				113		337
MS1-255	MS1	255	260	CORE								100				200		400
274965	MS1	256	258	1/2 CORE	-2		-0.01					56				125		320
274966	MS1	258	260	1/2 CORE	2		-0.01					68				119		358
274967	MS1	260	262	1/2 CORE	2		-0.01					73				203		432
MS1-260	MS1	260	265	CORE								100				400		500
274968	MS1	262	264	1/2 CORE	2		-0.01					65				310		654
274969	MS1	264	266	1/2 CORE	2		-0.01					56				259		417
MS1-265	MS1	265	270	CORE								100				400		700
274970	MS1	266	268	1/2 CORE	2		-0.01					63				263		503
274971	MS1	268	270	1/2 CORE	3		-0.01					64				308		790

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274972	MS1	270	272	1/2 CORE	2		-0.01					39				247		1401
MS1-270	MS1	270	271.4	CORE								100				300		3100
MS1-271.4	MS1	271.4	280	CORE								100				200		200
274973	MS1	272	274	1/2 CORE	-2		-0.01					15				106		353
274974	MS1	274	276	1/2 CORE	-2		-0.01					5				87		69
274975	MS1	276	278	1/2 CORE	-2		-0.01					7				74		155
274976	MS1	278	280	1/2 CORE	-2		-0.01					8				80		73
MS1-280	MS1	280	290	CORE								100				100		100
MS1-290	MS1	290	300	CORE								100				100		100
MS1-300	MS1	300	310	CORE								100				100		100
MS1-310	MS1	310	320	CORE								100				100		100
MS1-320	MS1	320	329.1	CORE								100				300		200
MS2-26	MS2	26	31	CORE								100				400		200
MS2-31	MS2	31	36.3	CORE								100				800		300
MS2-36.3	MS2	36.3	38.1	CORE								100				100		200
MS2-38.1	MS2	38.1	39.4	CORE								200				5100		3700
MS2-39.4	MS2	39.4	41.3	CORE								100				600		1100
MS2-41.3	MS2	41.3	43.3	CORE								100				500		400
MS2-43.3	MS2	43.3	44.2	CORE								100				900		2400
MS2-44.2	MS2	44.2	46.2	CORE								100				200		100
MS2-46.2	MS2	46.2	48.2	CORE								100				1100		400
MS2-48.2	MS2	48.2	50.2	CORE								100				1400		100
MS2-50.2	MS2	50.2	52	CORE								100				3700		1200
MS2-52	MS2	52	54	CORE								100				800		400
MS2-54	MS2	54	56	CORE								100				300		200
MS2-56	MS2	56	58	CORE								100				300		400
MS2-58	MS2	58	60	CORE								100				900		1900
MS2-60	MS2	60	62	CORE								100				6500		9500
MS2-62	MS2	62	63.9	CORE								100				5300		6000
MS2-63.9	MS2	63.9	65.6	CORE								100				1600		3000
MS2-65.6	MS2	65.6	68	CORE								100				1600		3400
MS2-68	MS2	68	70	CORE								100				1200		3300
MS2-70	MS2	70	72	CORE								100				800		1600
MS2-72	MS2	72	74	CORE								100				3800		7700
MS2-74	MS2	74	76	CORE								100				2300		5200
MS2-76	MS2	76	78	CORE								100				3000		6700
MS2-78	MS2	78	79.25	CORE								100				5200		8000
MS2-79.25	MS2	79.25	81	CORE								100				200		200

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS2-81	MS2	81	83	CORE								100				300		500
MS2-83	MS2	83	84.65	CORE								100				200		500
MS2-84.65	MS2	84.65	86	CORE								100				1800		4700
MS2-86	MS2	86	87.3	CORE								100				1800		3600
MS2-87.3	MS2	87.3	88	CORE								100				600		900
MS2-88	MS2	88	90	CORE								100				600		1200
MS2-90	MS2	90	92	CORE								100				900		1500
MS2-92	MS2	92	94	CORE								100				600		1400
MS2-94	MS2	94	96	CORE								100				300		800
MS2-96	MS2	96	98	CORE								100				200		500
MS2-98	MS2	98	100	CORE								100				200		400
MS2-100	MS2	100	102	CORE								100				200		300
MS2-102	MS2	102	104	CORE								100				2300		700
MS2-104	MS2	104	106	CORE								100				700		1000
MS2-106	MS2	106	108	CORE								100				1600		1100
MS2-108	MS2	108	110	CORE								100				300		400
MS2-110	MS2	110	112	CORE								100				600		700
MS2-112	MS2	112	114	CORE								100				700		1200
MS2-114	MS2	114	116	CORE								100				1100		1200
MS2-116	MS2	116	118	CORE								100				400		700
MS2-118	MS2	118	120	CORE								100				200		400
MS2-120	MS2	120	122	CORE								100				200		400
MS2-122	MS2	122	124	CORE								100				700		700
MS2-124	MS2	124	126	CORE								100				200		200
MS2-126	MS2	126	128	CORE								100				100		300
MS2-128	MS2	128	130	CORE								100				400		500
MS2-130	MS2	130	132	CORE								100				200		300
MS2-132	MS2	132	134	CORE								100				100		300
274977	MS2	133.9	136	1/2 CORE	-2		-0.01					6				23		93
MS2-134	MS2	134	140	CORE								100				100		100
274978	MS2	136	138	1/2 CORE	-2		-0.01					8				-5		67
274979	MS2	138	140	1/2 CORE	-2		-0.01					7				41		181
274981	MS2	140	142	1/2 CORE	-2		-0.01					4				128		302
MS2-140	MS2	140	150	CORE								100				500		400
274982	MS2	142	144	1/2 CORE	-2		-0.01					-4				250		576
274983	MS2	144	146	1/2 CORE	-2		-0.01					4				1565		1387
274984	MS2	146	148	1/2 CORE	-2		-0.01					7				162		287
274985	MS2	148	150	1/2 CORE	-2		-0.01					5				44		192

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274986	MS2	150	152	1/2 CORE	-2		-0.01					6				8		57
MS2-150	MS2	150	160	CORE								100				500		500
274987	MS2	152	154	1/2 CORE	-2		-0.01					110				25		135
274988	MS2	154	156	1/2 CORE	-2		-0.01					8				453		719
274989	MS2	156	158	1/2 CORE	-2		-0.01					5				1622		1710
274990	MS2	158	160	1/2 CORE	-2		-0.01					5				915		807
274991	MS2	160	162	1/2 CORE	-2		0					10				197		363
MS2-160	MS2	160	170	CORE								100				500		400
274992	MS2	162	164	1/2 CORE	-2		-0.01					14				333		549
274993	MS2	164	166	1/2 CORE	-2		-0.01					7				1124		928
274994	MS2	166	168	1/2 CORE	-2		-0.01					7				1044		860
274995	MS2	168	170	1/2 CORE	-2		-0.01					13				206		468
274996	MS2	170	172	1/2 CORE	-2		-0.01					10				181		354
MS2-170	MS2	170	180	CORE								100				600		800
274997	MS2	172	174	1/2 CORE	-2		-0.01					7				457		811
274998	MS2	174	176	1/2 CORE	-2		-0.01					27				1432		1565
274999	MS2	176	178	1/2 CORE	-2		-0.01					18				1027		1275
274801	MS2	178	180	1/2 CORE	-2		-0.01					18				242		528
MS2-180	MS2	180	190	CORE								100				200		300
274802	MS2	180	182	1/2 CORE	-2		0.01					10				197		377
274803	MS2	182	184	1/2 CORE	-2		0					12				252		377
274804	MS2	184	186	1/2 CORE	-2		-0.01					16				63		199
274805	MS2	186	188	1/2 CORE	-2		-0.01					16				92		209
274806	MS2	188	190	1/2 CORE	-2		-0.01					12				155		331
MS2-190	MS2	190	200	CORE								100				800		400
274807	MS2	190	192	1/2 CORE	-2		-0.01					6				1149		554
274808	MS2	192	194	1/2 CORE	-2		-0.01					13				993		612
274809	MS2	194	196	1/2 CORE	-2		-0.01					9				574		840
274810	MS2	196	198	1/2 CORE	-2		-0.01					30				324		520
274811	MS2	198	200	1/2 CORE	-2		-0.01					10				449		416
274812	MS2	200	202	1/2 CORE	-2		-0.01					9				524		568
MS2-200	MS2	200	210	CORE								200				1400		700
274813	MS2	202	204	1/2 CORE	-2		-0.01					5				449		525
274814	MS2	204	206	1/2 CORE	3		-0.01					315				3625		1673
274815	MS2	206	208	1/2 CORE	-2		-0.01					9				1898		1386
274816	MS2	208	210	1/2 CORE	-2		0					11				194		312
MS2-210	MS2	210	220	CORE								400				500		600
274817	MS2	210	212	1/2 CORE	-2		-0.01					14				413		617

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Be_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Mo_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274818	MS2	212	214	1/2 CORE	-2		-0.01					8				727		875
274819	MS2	214	216	1/2 CORE	-2		-0.01					10				491		2172
274821	MS2	216	218	1/2 CORE	-2		-0.01					37				532		1272
274822	MS2	218	220	1/2 CORE	-2		0					30				338		238
MS2-220	MS2	220	230	CORE								100				600		200
274823	MS2	220	222	1/2 CORE	10		-0.01					362				773		338
274824	MS2	222	224	1/2 CORE	-2		-0.01					58				436		148
274825	MS2	224	226	1/2 CORE	-2		-0.01					11				152		232
274826	MS2	226	228	1/2 CORE	-2		-0.01					7				155		286
274827	MS2	228	230	1/2 CORE	-2		-0.01					18				175		346
MS2-230	MS2	230	240	CORE								100				200		200
274828	MS2	230	232	1/2 CORE	-2		-0.01					43				383		375
274829	MS2	232	234	1/2 CORE	-2		-0.01					14				235		224
274830	MS2	234	236	1/2 CORE	-2		-0.01					7				130		193
274831	MS2	236	238	1/2 CORE	-2		-0.01					8				119		122
274832	MS2	238	240	1/2 CORE	-2		-0.01					10				115		137
MS2-240	MS2	240	250	CORE								100				100		100
274833	MS2	240	242	1/2 CORE	-2		-0.01					54				164		199
274834	MS2	242	244	1/2 CORE	-2		0					43				69		150
274835	MS2	244	246	1/2 CORE	-2		-0.01					18				136		183
274836	MS2	246	248	1/2 CORE	-2		0					10				123		210
274837	MS2	248	250	1/2 CORE	-2		0					8				103		192
274838	MS2	250	252	1/2 CORE	-2		-0.01					7				66		152
MS2-250	MS2	250	260	CORE								100				100		200
274839	MS2	252	254	1/2 CORE	-2		-0.01					6				62		133
274840	MS2	254	256	1/2 CORE	-2		-0.01					7				84		147
274841	MS2	256	258	1/2 CORE	-2		-0.01					6				126		137
274842	MS2	258	260	1/2 CORE	-2		-0.01					7				182		183
274843	MS2	260	262	1/2 CORE	-2		-0.01					24				373		160
MS2-260	MS2	260	270	CORE								100				200		300
274844	MS2	262	264	1/2 CORE	-2		-0.01					12				106		206
274845	MS2	264	266	1/2 CORE	-2		-0.01					21				113		183
274846	MS2	266	268	1/2 CORE	-2		-0.01					12				301		155
274847	MS2	268	270	1/2 CORE	-2		-0.01					8				159		196
MS2-270	MS2	270	272	CORE								100				200		200
MS2-272	MS2	272	274	CORE								100				100		300
MS2-274	MS2	274	276	CORE								100				300		200
MS2-276	MS2	276	278	CORE								100				300		100

SampleID	Hole_ID	Depth_Frc	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Mo_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS2-278	MS2	278	280	CORE								100				100		1900
MS2-280	MS2	280	282	CORE								200				300		400
MS2-282	MS2	282	284	CORE								100				400		1100
MS2-284	MS2	284	286	CORE								100				700		800
MS2-286	MS2	286	288	CORE								100				1500		200
MS2-288	MS2	288	290	CORE								100				300		300
MS2-290	MS2	290	292	CORE								100				300		400
MS2-292	MS2	292	294	CORE								100				300		100
MS2-294	MS2	294	296	CORE								100				100		300
MS2-296	MS2	296	298	CORE								100				100		100
MS2-298	MS2	298	301	CORE								100				100		100
MS3-10.4	MS3	10.4	12	CORE								30				1000		2800
MS3-12	MS3	12	13.4	CORE								20				500		1500
MS3-13.4	MS3	13.4	14.8	CORE								30				2800		5000
MS3-14.8	MS3	14.8	16.8	CORE								50				300		1000
MS3-16.8	MS3	16.8	18.8	CORE								30				200		800
MS3-18.8	MS3	18.8	20.8	CORE								20				200		500
MS3-20.8	MS3	20.8	22.8	CORE								20				200		600
MS3-22.8	MS3	22.8	24.8	CORE								30				200		600
MS3-24.8	MS3	24.8	26.8	CORE								20				200		900
MS3-26.8	MS3	26.8	28.8	CORE								20				200		1500
MS3-28.8	MS3	28.8	30.8	CORE								60				1200		2500
MS3-30.8	MS3	30.8	32.7	CORE								30				800		2400
274554	MS3	32	32	1/2 CORE														
MS3-32.7	MS3	32.7	36.5	CORE								20				400		1000
MS3-36.5	MS3	36.5	38.5	CORE								20				500		700
MS3-38.5	MS3	38.5	40.5	CORE								20				300		1400
MS3-40.5	MS3	40.5	42.3	CORE								20				700		1600
MS3-42.3	MS3	42.3	44.3	CORE								50				700		1200
MS3-44.3	MS3	44.3	46.3	CORE								50				1200		8400
MS3-46.3	MS3	46.3	48.3	CORE								60				1900		5600
MS3-48.3	MS3	48.3	50.3	CORE								60				1500		4800
MS3-50.3	MS3	50.3	51.3	CORE								90				1200		6800
MS3-51.3	MS3	51.3	53.3	CORE								50				900		1900
MS3-53.3	MS3	53.3	55.3	CORE								40				700		1100
MS3-55.3	MS3	55.3	57.3	CORE								30				1200		1200
MS3-57.3	MS3	57.3	59.3	CORE								60				1000		2300
MS3-59.3	MS3	59.3	61.3	CORE								30				600		4000

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS3-61.3	MS3	61.3	66.4	CORE								30				400		1000
MS3-66.4	MS3	66.4	71.4	CORE								30				300		700
MS3-71.4	MS3	71.4	76.4	CORE								20				300		600
MS3-76.4	MS3	76.4	81.4	CORE								20				200		400
MS3-81.4	MS3	81.4	86.4	CORE								20				400		600
MS3-86.4	MS3	86.4	91.4	CORE								20				700		700
MS3-91.4	MS3	91.4	96.4	CORE								20				300		700
MS3-96.4	MS3	96.4	101.4	CORE								60				1500		1300
MS3-101.4	MS3	101.4	106.4	CORE								40				700		1100
MS3-106.4	MS3	106.4	111.6	CORE								120				2500		2800
274555	MS3	109.4	109.4	1/2 CORE														
MS3-111.6	MS3	111.6	112.6	CORE								570				6800		15800
MS3-112.6	MS3	112.6	113.6	CORE								160				5800		6900
MS3-113.6	MS3	113.6	114.6	CORE								130				2600		6400
MS3-114.6	MS3	114.6	115.6	CORE								90				3600		2400
274556	MS3	115.3	115.3	1/2 CORE														
MS3-115.6	MS3	115.6	116.6	CORE								60				3500		2200
MS3-116.6	MS3	116.6	118.6	CORE								150				5500		4800
MS3-118.6	MS3	118.6	120.6	CORE								60				500		500
MS3-120.6	MS3	120.6	122.6	CORE								30				600		1000
MS3-122.6	MS3	122.6	124.6	CORE								90				1000		3100
MS3-124.6	MS3	124.6	126.6	CORE								140				2400		5600
MS3-126.6	MS3	126.6	128.6	CORE								210				3500		7000
MS3-128.6	MS3	128.6	130	CORE								160				1400		1900
MS3-130	MS3	130	132	CORE								920				1800		2500
MS3-132	MS3	132	134	CORE								70				400		200
MS3-134	MS3	134	136	CORE								110				4600		8500
MS3-136	MS3	136	138	CORE								210				7200		6300
MS3-138	MS3	138	140	CORE								120				4500		9500
MS3-140	MS3	140	142	CORE								60				1400		900
MS3-142	MS3	142	144	CORE								80				3200		6900
MS3-144	MS3	144	146	CORE								70				7200		8100
MS3-146	MS3	146	148	CORE								70				3200		6500
MS3-148	MS3	148	150	CORE								70				900		6300
MS3-150	MS3	150	152	CORE								30				500		400
MS3-152	MS3	152	154	CORE								20				300		500
MS3-154	MS3	154	156	CORE								50				400		600
MS3-156	MS3	156	160	CORE								20				300		200

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS3-160	MS3	160	165	CORE								30				400		600
MS3-165	MS3	165	170	CORE								50				600		400
MS3-170	MS3	170	175	CORE								50				3700		3200
MS3-175	MS3	175	180	CORE								60				4700		6900
MS3-180	MS3	180	185	CORE								60				3600		7500
MS3-185	MS3	185	190	CORE								50				800		4500
MS3-190	MS3	190	196.8	CORE								70				1300		4800
MS3-196.8	MS3	196.8	197.3	CORE								70				100		500
MS3-197.3	MS3	197.3	200	CORE								140				800		7400
MS3-200	MS3	200	205	CORE								80				700		5100
274557	MS3	200.25	200.25	1/2 CORE														
MS3-205	MS3	205	210	CORE								70				900		600
MS3-210	MS3	210	215	CORE								50				100		1700
MS3-215	MS3	215	220	CORE								70				300		1700
MS3-220	MS3	220	225	CORE								60				800		300
MS3-225	MS3	225	230	CORE								120				100		500
MS3-230	MS3	230	235	CORE								210				200		500
MS3-235	MS3	235	240	CORE								220				200		600
MS3-240	MS3	240	245	CORE								170				100		200
MS3-245	MS3	245	250	CORE								130				200		200
MS3-250	MS3	250	255	CORE								20				100		100
MS3-255	MS3	255	260	CORE								30				200		100
MS3-260	MS3	260	265	CORE								20				200		200
MS3-265	MS3	265	268	CORE								50				100		200
MS3-268	MS3	268	270	CORE								1100				200		300
MS3-270	MS3	270	272	CORE								40				100		200
MS3-272	MS3	272	274	CORE								60				100		200
274558	MS3	273.2	273.2	1/2 CORE														
MS3-274	MS3	274	276	CORE								20				100		200
MS3-276	MS3	276	278	CORE								80				200		1500
MS3-278	MS3	278	280	CORE								50				200		400
MS3-280	MS3	280	282	CORE								30				200		600
MS3-282	MS3	282	284	CORE								150				200		500
MS3-284	MS3	284	286	CORE								150				200		200
MS3-286	MS3	286	290.6	CORE								70				300		500
MS3-290.6	MS3	290.6	291.4	CORE								40				400		500
MS3-291.4	MS3	291.4	295.6	CORE								90				500		200
MS3-295.6	MS3	295.6	300	CORE								40				300		200

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS3-300	MS3	300	305	CORE								50				3200		100
MS3-305	MS3	305	310	CORE								30				500		100
274559	MS3	308.2	308.2	1/2 CORE														
MS3-310	MS3	310	315	CORE								30				1100		600
MS3-315	MS3	315	320	CORE								20				300		400
MS3-320	MS3	320	325	CORE								30				500		600
MS3-325	MS3	325	328	CORE								20				200		300
274560	MS3	326.6	326.6	1/2 CORE														
MS4-9	MS4	9	16	CORE								50				1200		5000
MS4-16	MS4	16	20	CORE								50				1000		4700
MS4-20	MS4	20	23	CORE								130				1900		5000
MS4-23	MS4	23	24	CORE								70				1950		7500
MS4-24	MS4	24	26	CORE								60				2050		6300
MS4-26	MS4	26	28.8	CORE								90				2650		9500
MS4-28.8	MS4	28.8	30	CORE								110				900		2000
MS4-30	MS4	30	32	CORE								90				220		1100
MS4-32	MS4	32	34	CORE								80				500		2350
MS4-34	MS4	34	36	CORE								50				400		2100
MS4-36	MS4	36	38	CORE								100				350		2140
MS4-38	MS4	38	40	CORE								90				850		4900
MS4-40	MS4	40	42	CORE								90				600		3300
MS4-42	MS4	42	44	CORE								130				150		1480
MS4-44	MS4	44	46	CORE								900				200		600
MS4-46	MS4	46	48	CORE								80				300		1150
MS4-48	MS4	48	50	CORE								80				100		4900
MS4-50	MS4	50	52	CORE								70				1050		3000
MS4-52	MS4	52	54	CORE								50				400		2150
MS4-54	MS4	54	56	CORE								80				2550		4900
MS4-56	MS4	56	58	CORE								80				2900		6500
MS4-58	MS4	58	60	CORE								60				950		4600
MS4-60	MS4	60	65	CORE								60				1550		3900
MS4-65	MS4	65	70	CORE								60				350		1120
MS4-70	MS4	70	75	CORE								40				200		770
MS4-75	MS4	75	80	CORE								20				350		460
MS4-80	MS4	80	85	CORE								10				200		290
MS4-85	MS4	85	90	CORE								30				150		530
MS4-90	MS4	90	95	CORE								30				120		270
MS4-95	MS4	95	99.5	CORE								30				80		300

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS4-99.5	MS4	99.5	101	CORE								70				80		500
MS4-101	MS4	101	105.6	CORE								90				110		440
MS4-105.6	MS4	105.6	108	CORE								110				70		1240
MS4-108	MS4	108	110	CORE								100				1620		5600
MS4-110	MS4	110	112	CORE								130				340		1800
MS4-112	MS4	112	114	CORE								150				130		820
MS4-114	MS4	114	116	CORE								120				140		1750
MS4-116	MS4	116	117.7	CORE								180				1330		16500
MS4-117.7	MS4	117.7	120	CORE								60				50		730
MS4-120	MS4	120	125	CORE								80				140		1000
MS4-125	MS4	125	130	CORE								30				160		470
MS4-130	MS4	130	135	CORE								40				480		810
MS4-135	MS4	135	140	CORE								60				280		140
MS4-140	MS4	140	141.8	CORE								60				1300		3500
MS4-141.8	MS4	141.8	142.4	CORE								130				330		600
MS4-142.4	MS4	142.4	144	CORE								180				1500		7400
MS4-144	MS4	144	146	CORE								270				1620		9000
MS4-146	MS4	146	148	CORE								280				2230		5500
MS4-148	MS4	148	150	CORE								140				3830		7800
MS4-150	MS4	150	152	CORE								60				1950		7600
MS4-152	MS4	152	154	CORE								60				780		1160
MS4-154	MS4	154	157	CORE								20				370		1330
MS4-157	MS4	157	160.7	CORE								30				190		110
MS4-160.7	MS4	160.7	162	CORE								50				320		200
MS4-162	MS4	162	164	CORE								70				1180		580
MS4-164	MS4	164	166	CORE								140				950		100
MS4-166	MS4	166	168	CORE								60				1200		100
MS4-168	MS4	168	170	CORE								90				1670		350
MS4-170	MS4	170	172	CORE								80				1320		270
MS4-172	MS4	172	174	CORE								70				1850		590
MS4-174	MS4	174	176	CORE								100				210		300
MS4-176	MS4	176	178	CORE								700				260		390
MS4-178	MS4	178	180	CORE								90				390		1000
MS4-180	MS4	180	182	CORE								90				480		1100
MS4-182	MS4	182	184	CORE								110				540		1360
MS4-184	MS4	184	186	CORE								60				450		1120
MS4-186	MS4	186	187.9	CORE								80				400		700
MS4-187.9	MS4	187.9	190	CORE								30				90		140

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS4-190	MS4	190	195	CORE								20				100		200
MS5-0	MS5	0	6	1/2 CORE	-2							20		400		-50		150
MS5-6	MS5	6	12	1/2 CORE	-2							40		400		-50		150
MS5-12	MS5	12	17	1/2 CORE	-2							20		300		50		200
274561	MS5	13	13	1/2 CORE														
MS5-17	MS5	17	22	1/2 CORE	-2							20		400		-50		250
MS5-22	MS5	22	28	1/2 CORE	-2							50		400		200		300
MS5-28	MS5	28	31.5	1/2 CORE	-2							60		600		200		300
MS5-31.5	MS5	31.5	34	1/2 CORE	2							60		500		1050		4000
MS5-34	MS5	34	37	1/2 CORE	-2							80		600		100		300
MS5-37	MS5	37	40	1/2 CORE	-2							50		700		100		300
MS5-40	MS5	40	43	1/2 CORE	-2							80		700		200		400
MS5-43	MS5	43	46	1/2 CORE	-2							60		500		100		150
MS5-46	MS5	46	49	1/2 CORE	-2							70		500		100		200
MS5-49	MS5	49	52	1/2 CORE	-2							140		600		100		200
MS5-52	MS5	52	55	1/2 CORE	-2							90		400		100		200
MS5-55	MS5	55	58	1/2 CORE	-2							80		400		100		300
MS5-58	MS5	58	62.4	1/2 CORE	-2							100		200		200		350
MS5-62.4	MS5	62.4	64.1	1/2 CORE	-2							30		200		600		2200
MS5-64.1	MS5	64.1	67	1/2 CORE	-2							30		200		150		250
MS5-67	MS5	67	70	1/2 CORE	-2							30		200		50		300
MS5-70	MS5	70	76	1/2 CORE	-2							20		200		-50		200
MS5-76	MS5	76	82	1/2 CORE	-2							20		200		-50		150
MS5-82	MS5	82	88	1/2 CORE	-2							30		200		-50		150
MS5-88	MS5	88	94	1/2 CORE	-2							50		200		-50		200
MS5-94	MS5	94	100	1/2 CORE	-2							30		200		50		200
MS5-100	MS5	100	103.6	1/2 CORE	2							70		200		2200		550
MS5-103.6	MS5	103.6	105.8	1/2 CORE	-2							20		400		1550		300
MS5-105.8	MS5	105.8	109	1/2 CORE	-2							120		400		1450		6600
MS5-109	MS5	109	112	1/2 CORE	-2							40		400		450		2000
MS5-112	MS5	112	115	1/2 CORE	-2							60		400		100		250
MS5-115	MS5	115	118	1/2 CORE	-2							130		300		50		150
MS5-118	MS5	118	121	1/2 CORE	-2							50		400		50		150
MS5-121	MS5	121	124	1/2 CORE	-2							40		400		150		100
MS5-124	MS5	124	127	1/2 CORE	-2							50		400		100		150
MS5-127	MS5	127	130	1/2 CORE	-2							40		400		100		100
MS5-130	MS5	130	133	1/2 CORE	-2							50		300		50		100
MS5-133	MS5	133	136	1/2 CORE	-2							60		400		150		200

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
MS5-136	MS5	136	139	1/2 CORE	-2							120		400		150		300
42449	MS6	148.6	150.8	1/2 CORE	-1	-50	-0.008		13			17	33600	0		15		137
42401	MS6	150.8	151.6	1/2 CORE	-1	-50	-0.008		-10			14	33700	0		27		272
42402	MS6	151.6	152.2	1/2 CORE	-1	-50	-0.008		-10			53	43900	0		201		768
42403	MS6	152.2	153.6	1/2 CORE	-1	-50	-0.008		-10			15	28400	0		18		95
42404	MS6	153.6	155.6	1/2 CORE	-1	-50	-0.008		-10			14	13900	0		55		180
42405	MS6	155.6	157.6	1/2 CORE	-1	-50	-0.008		-10			16	17800	0		79		176
42406	MS6	157.6	159.6	1/2 CORE	-1	-50	-0.008		-10			12	16400	0		180		469
42407	MS6	159.6	161.6	1/2 CORE	-1	-50	-0.008		-10			34	27100	0		233		525
42408	MS6	161.6	163.6	1/2 CORE	-1	-50	-0.008		-10			53	37900	0		363		1164
42409	MS6	163.6	165.2	1/2 CORE	-1	-50	-0.008		-10			21	24700	0		307		385
42410	MS6	165.2	167.2	1/2 CORE	-1	110	-0.008		-10			34	39000	0		181		1509
42411	MS6	167.2	169.2	1/2 CORE	-1	-50	0.028		-10			5	28700	0		79		96
42412	MS6	169.2	171.2	1/2 CORE	-1	-50	0.028		-10			10	23900	0		-3		51
42413	MS6	171.2	173.2	1/2 CORE	-1	122	-0.008		-10			7	33700	0		14		87
42414	MS6	173.2	174.2	1/2 CORE	-1	108	-0.008		-10			67	32800	0		212		372
42415	MS6	174.2	177.2	1/2 CORE	-1	-50	-0.008		-10			26	8800	0		276		1911
42416	MS6	177.2	179.2	1/2 CORE	-1	-50	-0.008		-10			7	10200	0		85		231
42417	MS6	179.2	181.2	1/2 CORE	-1	-50	-0.008		-10			2	10100	0		50		126
42418	MS6	181.2	183.2	1/2 CORE	-1	-50	-0.008		-10			4	9600	0		53		144
42419	MS6	183.2	186.1	1/2 CORE	-1	-50	-0.008		-10			3	6800	0		64		393
42420	MS6	186.2	188.1	1/2 CORE	-1	-50	-0.008		-10			55	21700	0		682		2131
42421	MS6	188.1	190.1	1/2 CORE	-1	51	-0.008		-10			93	22300	0		89		143
42422	MS6	190.1	192.1	1/2 CORE	-1	60	-0.008		-10			61	21500	0		77		100
42423	MS6	192.1	194.1	1/2 CORE	-1	92	-0.008		-10			98	24900	0		92		125
42424	MS6	194.1	196.1	1/2 CORE	-1	-50	-0.008		-10			58	23100	0		95		107
42425	MS6	196.1	198.1	1/2 CORE	-1	72	-0.008		-10			53	22500	0		54		89
42426	MS6	198.1	200.1	1/2 CORE	-1	82	-0.008		-10			53	23200	0		57		89
42427	MS6	200.1	202.1	1/2 CORE	-1	-50	-0.008		-10			62	23400	0		80		138
42428	MS6	202.1	204.1	1/2 CORE	-1	56	-0.008		-10			70	21800	0		128		136
42429	MS6	204.1	206.1	1/2 CORE	-1	-50	-0.008		-10			56	24100	0		144		351
42430	MS6	206.1	208.1	1/2 CORE	-1	154	-0.008		-10			84	18200	0		370		1002
42431	MS6	208.1	210.7	1/2 CORE	-1	127	-0.008		-10			70	21800	0		363		2533
42432	MS6	210.7	213.8	1/2 CORE	-1	-50	-0.008		-10			25	24000	0		108		512
42433	MS6	213.8	217.7	1/2 CORE	-1	-50	-0.008		-10			5	18900	0		81		323
42434	MS6	217.7	220.4	1/2 CORE	-1	-50	-0.008		-10			10	30600	0		94		488
42435	MS6	220.4	223.6	1/2 CORE	-1	-50	-0.008		-10			8	33300	0		110		476
42436	MS6	223.6	226.3	1/2 CORE	-1	-50	-0.008		-10			12	39200	0		245		787

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
42437	MS6	226.3	230.5	1/2 CORE	-1	-50	-0.008		-10			5	34600	0		106		731
42438	MS6	230.5	234.9	1/2 CORE	-1	-50	-0.008		-10			4	45500	0		49		844
42439	MS6	234.9	240.3	1/2 CORE	-1	-50	-0.008		-10			3	26400	0		79		251
42440	MS6	240.3	243.7	1/2 CORE	-1	-50	-0.008		-10			-2	25500	0		59		520
42441	MS6	243.7	246.7	1/2 CORE	-1	-50	-0.008		-10			-2	24870	0		87		503
42442	MS6	246.7	249.7	1/2 CORE	-1	-50	-0.008		-10			4	25000	0		123		328
42443	MS6	249.7	252.7	1/2 CORE	-1	-50	-0.008		-10			-2	31900	0		91		405
42444	MS6	252.7	255.7	1/2 CORE	-1	-50	-0.008		-10			-2	22900	0		88		259
42445	MS6	255.7	257.8	1/2 CORE	-1	-50	-0.008		-10			2	20500	0		64		198
42446	MS6	257.8	261	1/2 CORE	-1	-50	-0.008		-10			4	20700	0		127		169
42447	MS6	261	264.4	1/2 CORE	-1	-50	-0.008		-10			4	15000	0		9		58
42448	MS6	264.4	267.4	1/2 CORE	-1	-50	-0.008		26			3	26400	0		38		114
274301	MS7	24	25	1/2 CORE	-0.1	7	-0.01	844	-0.1	0.2	-5	7	19015	1419	-10	-50	1.7	170
274302	MS7	25	26	1/2 CORE	-0.1	6	-0.01	1076	-0.1	0.1	-5	-5	18725	1010	-10	54	1.6	164
274303	MS7	26	27	1/2 CORE	-0.1	4	-0.01	857	-0.1	0.3	-5	-5	21643	2164	-10	56	1.2	194
274304	MS7	27	28	1/2 CORE	-0.1	3	-0.01	838	-0.1	-0.1	-5	-5	20508	1239	-10	-50	0.9	184
274562	MS7	77	77	1/2 CORE														
273505	MS7	103	105	1/2 CORE	-0.1	4	0.003	1530	-0.1	0.6	-5	-5	14500	805	-10	54	0.9	147
273506	MS7	105	107	1/2 CORE	-0.1	1	0.002	1070	0.1	0.5	-5	10	14400	820	-10	64	0.6	133
273507	MS7	107	109.3	1/2 CORE	1.4	9	0.004	715	0.3	3.1	-5	30	14400	985	-10	141	0.9	833
274305	MS7	109.3	111	1/2 CORE	1.5	41	-0.01	822	0.2	13.2	9	47	24747	1002	29	480	5.4	3546
274306	MS7	111	113	1/2 CORE	1.1	32	-0.01	739	1.1	4.8	9	43	30700	1270	35	371	3.9	1430
274307	MS7	113	115	1/2 CORE	1.1	46	-0.01	861	0.5	2.4	12	48	32323	1030	48	229	5.8	860
274308	MS7	115	117	1/2 CORE	0.8	43	-0.01	717	0.4	0.6	13	51	38252	1427	42	74	4.9	253
274309	MS7	117	119	1/2 CORE	1.2	49	-0.01	697	0.4	0.4	15	92	34680	1330	48	83	6.9	166
274310	MS7	119	120	1/2 CORE	0.9	44	-0.01	670	0.4	0.4	14	83	34356	1228	40	78	6.8	181
274311	MS7	120	122	1/2 CORE	0.7	35	-0.01	658	0.5	0.8	11	41	30746	1025	53	82	5.1	285
274312	MS7	122	124	1/2 CORE	0.7	31	-0.01	686	0.5	0.5	12	44	30192	915	61	82	4.0	224
274313	MS7	124	126	1/2 CORE	0.9	40	-0.01	717	0.4	0.7	11	33	32190	1048	61	90	5.2	264
274314	MS7	126	128	1/2 CORE	0.9	30	-0.01	798	0.5	0.6	14	43	30417	1104	75	91	6.2	259
274315	MS7	128	130	1/2 CORE	1.2	56	-0.01	868	1.3	0.3	16	81	44615	1364	79	68	8.4	148
274316	MS7	130	132	1/2 CORE	0.8	44	-0.01	926	2.3	2.3	14	57	43285	1420	67	230	6.9	708
274317	MS7	132	134	1/2 CORE	0.9	51	-0.01	922	0.7	6.2	16	41	36667	788	86	354	6.4	1892
274318	MS7	134	136	1/2 CORE	0.8	49	-0.01	968	0.6	1.4	16	51	31330	1005	75	103	7.3	300
274319	MS7	136	138	1/2 CORE	0.6	46	-0.01	1024	0.5	0.5	16	62	39898	754	78	-50	6.8	199
274321	MS7	138	140	1/2 CORE	0.3	20	-0.01	989	0.9	0.1	15	94	31317	636	57	-50	3.2	103
274322	MS7	140	142	1/2 CORE	0.2	19	-0.01	845	0.8	0.4	14	76	28629	635	66	-50	2.6	176
274323	MS7	142	144	1/2 CORE	0.1	21	-0.01	1063	0.7	0.2	13	59	31077	590	80	-50	3.3	116

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274324	MS7	144	146	1/2 CORE	0.1	34	-0.01	1217	1.6	0.1	15	58	37438	517	77	-50	4.4	106
274325	MS7	146	148	1/2 CORE	0.1	20	-0.01	1230	2.8	0.1	17	86	34627	512	60	-50	3.7	94
274326	MS7	148	150	1/2 CORE	-0.1	24	-0.01	885	1.4	-0.1	14	47	54315	652	72	-50	2.4	85
274327	MS7	150	152	1/2 CORE	-0.1	29	-0.01	929	1.1	-0.1	16	49	65200	785	72	-50	3.3	88
274328	MS7	152	154	1/2 CORE	-0.1	35	-0.01	935	0.8	-0.1	14	45	50537	1161	68	-50	3.7	96
274329	MS7	154	156	1/2 CORE	0.2	37	-0.01	1254	2.3	0.3	14	61	30306	740	79	-50	6.8	116
274330	MS7	156	158	1/2 CORE	0.5	65	-0.01	1097	1.1	1.5	15	67	54439	622	73	137	10.5	294
274331	MS7	158	160	1/2 CORE	0.8	71	-0.01	1107	1.3	0.8	17	62	44433	1015	75	216	14.3	210
274332	MS7	160	162	1/2 CORE	0.6	54	-0.01	912	1.2	0.6	15	51	45377	1349	58	113	12.0	217
274333	MS7	162	164	1/2 CORE	0.8	70	-0.01	941	1	0.5	14	80	37512	829	63	130	16.5	162
274334	MS7	164	166	1/2 CORE	1	92	-0.01	949	1.2	2.8	18	110	46528	903	65	422	18.1	410
274335	MS7	166	168	1/2 CORE	0.9	102	-0.01	810	1.2	0.7	14	57	50769	598	66	134	19.7	231
274336	MS7	168	170	1/2 CORE	0.6	63	-0.01	797	1.1	0.7	17	151	32475	1287	62	131	11.6	221
274337	MS7	170	172	1/2 CORE	0.3	45	-0.01	770	0.9	0.6	14	64	31878	913	77	114	13.0	211
274338	MS7	172	174	1/2 CORE	0.6	51	-0.01	710	0.7	0.5	13	45	42115	1500	72	131	12.9	174
274339	MS7	174	176	1/2 CORE	0.6	58	-0.01	596	0.6	0.9	16	34	64423	2183	68	159	11.4	274
274341	MS7	176	178	1/2 CORE	0.9	78	-0.01	584	0.7	1.7	30	77	35354	2394	83	305	14.8	431
274342	MS7	178	180	1/2 CORE	1.6	78	-0.01	566	0.8	2.4	22	60	51457	2362	76	534	18.5	593
274343	MS7	180	182	1/2 CORE	1.7	58	-0.01	619	1	4.3	18	86	33527	1672	75	614	19.8	1179
274344	MS7	182	183	1/2 CORE	1.9	65	-0.01	626	0.9	5.4	21	85	30200	1500	79	466	18.8	1590
274345	MS7	183	184	1/2 CORE	1.5	38	-0.01	617	0.9	5.2	17	95	31429	2453	77	343	11.3	1695
274346	MS7	184	185	1/2 CORE	1.4	64	-0.01	529	1	2.4	29	76	54384	3783	84	367	10.5	728
274347	MS7	185	186	1/2 CORE	2.5	46	-0.01	488	1.4	16.5	38	98	59022	3250	86	1020	8.5	4261
274348	MS7	186	187	1/2 CORE	1.7	49	-0.01	606	1.1	3.8	18	105	34592	3122	82	364	11.4	1163
274349	MS7	187	188	1/2 CORE	1.6	55	-0.01	562	1	3.4	16	59	55071	3640	85	318	10.0	957
274350	MS7	188	189	1/2 CORE	1.5	77	-0.01	241	1	5.2	47	68	96344	10366	81	275	7.5	1527
274351	MS7	189	190	1/2 CORE	1.7	68	-0.01	394	0.9	5	65	78	72400	8450	96	296	11.8	1440
274352	MS7	190	191	1/2 CORE	1.8	82	-0.01	273	0.8	4.4	69	104	73052	12113	91	484	14.0	1277
274353	MS7	191	192	1/2 CORE	2.9	86	-0.01	271	0.9	10.1	45	60	96000	7942	66	1327	17.7	2195
274354	MS7	192	193	1/2 CORE	1.9	57	-0.01	241	0.7	14.9	21	53	97487	5623	63	1456	9.5	3016
274355	MS7	193	194	1/2 CORE	2.6	90	-0.01	362	0.9	17.3	26	56	102000	3512	82	837	11.7	3600
274356	MS7	194	195	1/2 CORE	1.7	96	-0.01	358	0.8	4.6	46	53	76232	7768	80	176	10.6	957
274357	MS7	195	196	1/2 CORE	1.4	97	-0.01	336	0.9	8.1	54	76	81959	7340	94	167	14.9	2113
274358	MS7	196	197	1/2 CORE	0.9	178	-0.01	353	0.7	8.8	16	59	75474	3411	64	425	11.5	1842
274359	MS7	197	198	1/2 CORE	1.3	191	0.02	606	0.9	10.5	14	53	33769	1146	79	800	12.2	1106
274361	MS7	198	199	1/2 CORE	0.5	95	-0.01	622	0.9	2.7	14	45	31401	770	88	218	15.7	349
274362	MS7	199	200	1/2 CORE	0.5	138	-0.01	609	1.7	0.6	14	60	37979	819	88	167	19.1	140
274363	MS7	200	202	1/2 CORE	0.4	93	-0.01	613	1.4	0.5	14	58	34054	665	90	150	16.4	156

SampleID	Side_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274364	MS7	202	204	1/2 CORE	0.3	69	-0.01	641	1.2	0.4	14	47	29579	645	86	123	12.7	157
274365	MS7	204	206	1/2 CORE	0.6	63	-0.01	614	1	1.3	13	48	35333	903	88	256	13.7	370
274366	MS7	206	208	1/2 CORE	0.5	67	-0.01	652	1	1.6	15	45	34343	878	96	376	14.3	513
274367	MS7	208	210	1/2 CORE	0.4	46	-0.01	664	0.9	0.4	14	40	35600	794	100	103	11.4	203
274368	MS7	210	212	1/2 CORE	1.3	52	-0.01	673	0.8	1.8	16	49	28750	689	99	351	12.4	579
274369	MS7	212	214	1/2 CORE	0.6	42	-0.01	649	1	1.9	14	58	26264	688	97	264	12.8	590
274370	MS7	214	216	1/2 CORE	0.8	62	-0.01	679	1.3	3	16	82	26103	525	98	331	17.2	853
274371	MS7	216	218	1/2 CORE	0.6	82	-0.01	700	0.7	2.4	16	61	26432	561	101	367	16.9	492
274372	MS7	218	220	1/2 CORE	0.3	125	-0.01	729	0.6	2.5	17	57	27385	594	108	133	21.4	362
274373	MS7	220	222	1/2 CORE	0.2	90	-0.01	665	0.6	1.8	15	40	25619	766	96	143	18.4	339
274374	MS7	222	224	1/2 CORE	0.4	54	-0.01	688	0.7	1.2	16	52	27310	635	103	138	19.0	413
274375	MS7	224	226	1/2 CORE	0.5	43	-0.01	647	0.7	1.3	15	50	26432	923	96	129	14.6	442
274376	MS7	226	228	1/2 CORE	0.5	40	-0.01	681	0.8	1.3	16	48	26111	1083	104	143	14.8	443
274377	MS7	228	230	1/2 CORE	0.6	38	-0.01	638	0.6	1.4	15	54	25930	1246	104	166	15.1	494
274378	MS7	230	231.8	1/2 CORE	0.7	48	-0.01	703	0.7	2	17	65	26792	915	111	254	10.1	672
274379	MS7	231.8	234	1/2 CORE	0.2	10	-0.01	986	0.1	1.3	-5	10	16555	810	51	167	3.4	435
274381	MS7	252	254	1/2 CORE	-0.1	14	-0.01	1031	0.1	0.5	5	12	14652	766	144	60	2.8	169
274382	MS7	254	255.8	1/2 CORE	0.4	61	-0.01	773	0.2	6.1	16	44	26256	878	159	285	7.0	2152
274383	MS7	255.8	258.4	1/2 CORE	0.4	34	-0.01	946	0.3	2.9	14	22	22938	1924	218	250	6.2	986
274384	MS7	258.4	261.2	1/2 CORE	0.2	10	-0.01	858	0.2	1.2	-5	10	17868	1492	76	191	2.6	370
274385	MS7	261.2	263	1/2 CORE	1.2	37	-0.01	736	0.8	4.7	14	66	26633	1265	128	618	13.7	1520
274386	MS7	263	265	1/2 CORE	1.2	42	-0.01	738	0.9	3.8	15	53	28141	804	129	670	15.2	1216
274387	MS7	265	267	1/2 CORE	0.6	29	-0.01	707	0.5	1.1	13	38	26923	1096	97	159	17.6	359
274388	MS7	267	269	1/2 CORE	0.7	30	-0.01	722	0.7	1.2	15	46	27941	860	99	230	18.5	405
274389	MS7	269	271	1/2 CORE	0.8	29	-0.01	707	0.9	1.4	13	43	28200	941	93	270	16.3	444
274390	MS7	271	273	1/2 CORE	0.7	30	-0.01	716	0.7	1.8	15	50	27941	775	99	257	17.2	552
274391	MS7	273	275	1/2 CORE	0.7	24	-0.01	735	0.6	2.5	15	51	28300	852	102	430	12.9	770
274392	MS7	275	277	1/2 CORE	0.8	29	-0.01	713	0.8	2.2	14	40	28079	941	95	322	15.9	666
274393	MS7	277	279	1/2 CORE	0.5	29	-0.01	743	0.6	1.7	15	40	27164	588	106	226	17.3	503
274394	MS7	279	281	1/2 CORE	0.5	24	-0.01	721	0.6	1.6	14	49	26337	682	99	213	14.7	480
274395	MS7	281	283	1/2 CORE	0.5	34	-0.01	785	0.7	1.2	15	47	26832	618	97	229	17.2	384
274396	MS7	283	285	1/2 CORE	0.7	50	-0.01	1027	0.7	1.7	15	47	27979	1149	94	247	17.7	550
274397	MS7	285	287	1/2 CORE	1.7	48	-0.01	718	1.6	9.9	15	66	30686	963	96	844	20.3	3069
274398	MS7	287	289	1/2 CORE	1.4	59	-0.01	701	1	7	17	90	27843	616	94	610	23.9	2108
274399	MS7	289	291	1/2 CORE	1.3	57	-0.01	660	0.8	4.4	15	90	28019	1073	93	485	24.9	1314
274401	MS7	291	293	1/2 CORE	1.1	89	-0.01	629	1	3.7	14	66	29469	1353	83	381	28.0	1121
274402	MS7	293	295	1/2 CORE	1.1	80	-0.01	702	0.9	5.6	16	66	27374	715	90	451	28.8	1727
274403	MS7	295	297	1/2 CORE	1.6	113	-0.01	658	0.9	6.7	15	54	27300	949	82	697	31.3	2110

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274404	MS7	297	299	1/2 CORE	1.1	118	-0.01	665	0.9	4.5	16	46	29100	728	86	371	30.6	1470
274405	MS7	299	301	1/2 CORE	1.8	157	-0.01	696	1.1	6.5	17	75	28750	956	92	825	34.4	2106
274406	MS7	301	303	1/2 CORE	2.3	140	-0.01	679	1.4	10.5	16	76	27500	1673	86	1192	34.6	3298
274407	MS7	303	305	1/2 CORE	1.7	175	-0.01	683	1.7	5.8	16	52	34086	1366	85	980	37.6	1839
274408	MS7	305	307	1/2 CORE	1.8	236	-0.01	658	2.1	4.4	18	63	39596	896	103	1121	43.4	1495
274409	MS7	307	309	1/2 CORE	1.3	191	-0.01	678	1.8	0.8	17	44	42769	1046	82	915	42.9	327
274410	MS7	309	311	1/2 CORE	0.7	136	-0.01	625	1	0.8	15	37	47157	1726	57	581	29.2	363
274411	MS7	311	313	1/2 CORE	1.3	128	-0.01	739	0.9	2.7	17	32	41643	2135	55	958	30.8	900
274412	MS7	313	315.1	1/2 CORE	1.4	183	0.025	608	1.1	1.2	16	59	60000	2089	52	1084	29.4	462
274413	MS7	315.1	316.1	1/2 CORE	2	113	-0.01	1055	0.9	8.1	9	43	25498	2237	30	976	21.8	2654
274414	MS7	316.1	317.2	1/2 CORE	2	149	-0.01	698	1.2	8.4	13	57	25446	2970	40	1267	19.5	2871
274415	MS7	317.2	319	1/2 CORE	3.6	51	-0.01	796	8.3	3.5	-5	23	25482	4213	-10	831	7.7	1340
274416	MS7	319	321	1/2 CORE	1.3	24	-0.01	624	2.9	3.1	-5	29	33103	5113	-10	1035	6.4	1281
274417	MS7	321	323	1/2 CORE	3	19	-0.01	518	6.9	2.7	8	68	43122	6771	-10	1288	5.3	1288
274418	MS7	323	325	1/2 CORE	13	20	-0.01	575	92.7	2.3	8	117	44828	2542	-10	1084	6.3	1350
274419	MS7	325	327	1/2 CORE	0.2	8	-0.01	814	3.9	0.5	-5	-5	19718	2376	-10	80	3.6	259
274421	MS7	327	329	1/2 CORE	0.2	8	-0.01	845	0.9	1	-5	11	21569	2716	-10	95	4.2	439
274422	MS7	329	331	1/2 CORE	1.2	7	-0.01	1045	3.5	1.5	-5	40	33909	3442	-10	227	3.2	675
274423	MS7	331	333	1/2 CORE	0.2	6	-0.01	891	0.7	0.3	-5	7	20816	2367	-10	55	4.0	168
274424	MS7	333	335	1/2 CORE	2.6	8	-0.01	1143	95.9	1	-5	80	31304	3848	-10	373	4.4	457
274425	MS7	335	337	1/2 CORE	0.3	8	-0.01	1096	3.9	0.5	-5	27	23941	3576	-10	105	3.9	244
274426	MS7	337	339	1/2 CORE	0.2	5	-0.01	971	0.9	0.4	-5	7	22121	2505	-10	78	3.4	208
274427	MS7	339	341	1/2 CORE	0.2	4	-0.01	1239	0.5	0.6	-5	37	24115	2191	-10	-50	3.7	270
274428	MS7	341	343	1/2 CORE	0.2	4	-0.01	1114	0.3	1.7	-5	-5	22844	1829	-10	62	3.1	486
274429	MS7	343	345	1/2 CORE	0.5	5	-0.01	981	0.7	1.3	-5	28	27813	2125	-10	170	3.3	491
274430	MS7	345	347	1/2 CORE	0.3	2	-0.01	1078	0.4	0.4	-5	6	19095	2342	-10	96	2.2	219
274431	MS7	347	349	1/2 CORE	0.3	5	-0.01	1467	0.4	0.6	-5	7	20500	2510	-10	115	2.7	285
274432	MS7	349	351	1/2 CORE	0.4	5	-0.01	1607	0.6	0.6	-5	11	26139	2782	-10	120	2.5	297
274433	MS7	351	353	1/2 CORE	0.3	5	-0.01	2063	0.4	0.3	-5	9	23333	2448	-10	90	3.2	192
274434	MS7	353	355	1/2 CORE	2	5	-0.01	1836	4	0.4	-5	6	27349	3209	-10	167	3.3	213
274567	MS7	353.3	353.3	1/2 CORE														
274435	MS7	355	357	1/2 CORE	0.3	2	-0.01	1699	0.7	0.3	-5	-5	24138	2562	-10	85	2.8	180
274436	MS7	357	359	1/2 CORE	0.6	1	-0.01	1505	1	0.6	-5	-5	27282	2728	-10	200	1.8	336
274437	MS7	359	361	1/2 CORE	0.3	3	-0.01	1323	0.5	0.3	-5	44	36617	2915	-10	180	2.9	272
274438	MS7	361	364	1/2 CORE	0.2	1	-0.01	937	0.1	1.2	-5	94	48962	3330	-10	671	2.3	897
274439	MS7	364	365	1/2 CORE	1.2	2	-0.01	1086	0.8	2.7	8	95	64412	4559	-10	2637	3.6	1775
274441	MS7	365	366	1/2 CORE	0.4	12	-0.01	1070	0.3	1.3	6	11	54519	3481	-10	927	3.8	1019
274442	MS7	366	368	1/2 CORE	0.5	7	-0.01	902	0.2	1	7	29	54857	2219	-10	887	3.2	804

645324

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274443	MS7	368	370	1/2 CORE	0.3	3	-0.01	1213	0.3	0.4	-5	17	40096	3273	-10	438	3.2	320
274444	MS7	370	372	1/2 CORE	0.6	6	-0.01	487	1	0.2	7	14	35838	3482	-10	314	3.0	249
274445	MS7	372	374	1/2 CORE	0.5	8	-0.01	538	0.6	0.1	12	87	43179	3333	-10	566	3.0	269
274446	MS7	374	375	1/2 CORE	1.7	11	-0.01	400	0.8	3.9	31	297	98100	8180	-10	4800	4.0	1620
274447	MS7	375	376	1/2 CORE	2.2	9	0.155	361	0.9	6.3	30	419	114000	19310	-10	6591	4.9	2562
274448	MS7	376	377	1/2 CORE	0.5	2	-0.01	565	0.4	1.7	-5	33	35149	13465	-10	1297	2.8	972
274449	MS7	377	378	1/2 CORE	0.7	2	-0.01	504	0.7	2.9	-5	7	43846	20769	-10	1356	2.9	1481
274450	MS7	378	380	1/2 CORE	0.6	2	-0.01	520	0.8	1.5	-5	6	32857	9105	-10	722	2.9	862
274451	MS7	380	382	1/2 CORE	0.3	-1	-0.01	502	0.4	0.4	-5	13	27565	3399	-10	161	2.1	283
274452	MS7	382	384	1/2 CORE	0.3	-1	-0.01	592	0.3	0.2	-5	20	26804	3093	-10	74	2.3	168
274453	MS7	384	386	1/2 CORE	0.2	2	-0.01	523	0.2	0.2	-5	27	39610	3932	-10	-50	2.7	227
274454	MS7	386	388	1/2 CORE	0.3	5	-0.01	553	2.5	0.2	-5	31	22574	3366	-10	70	3.8	139
274455	MS7	388	390	1/2 CORE	0.4	7	0.6	519	1.1	0.2	7	36	34082	2867	-10	181	4.8	229
274456	MS7	390	392	1/2 CORE	0.6	3	-0.01	494	0.7	0.8	-5	31	31837	6041	-10	523	3.7	594
274457	MS7	392	394	1/2 CORE	0.8	6	-0.01	504	0.6	1	6	87	54829	9951	-10	925	4.2	883
274458	MS7	394	396	1/2 CORE	1.1	13	-0.01	418	0.7	1	10	70	70439	4156	-10	2010	4.1	852
274459	MS7	396	398	1/2 CORE	1.9	9	-0.01	458	1.7	1.3	-5	34	17833	1094	-10	843	4.7	254
274461	MS7	398	400	1/2 CORE	0.7	8	-0.01	462	0.3	0.5	8	12	54082	2582	-10	1133	4.7	435
274462	MS7	400	401	1/2 CORE	1	9	-0.01	477	0.3	1.4	10	52	53495	3087	-10	2699	4.9	884
274463	MS7	401	402	1/2 CORE	1.2	7	-0.01	468	0.7	2.4	24	85	59800	3530	-10	1770	4.1	1130
274464	MS7	402	403	1/2 CORE	0.8	9	-0.01	4262	0.6	1.4	19	29	60796	3622	-10	1055	4.5	799
274465	MS7	403	404	1/2 CORE	0.8	5	-0.01	804	0.4	1.9	34	32	74286	4592	-10	1316	4.0	961
274466	MS7	404	405	1/2 CORE	0.9	61	-0.01	425	0.4	1	25	34	79000	4800	-10	1070	4.4	664
274467	MS7	405	406	1/2 CORE	0.8	14	-0.01	502.5	0.3	0.7	21	20	58000	3320	-10	760	4.6	619
274468	MS7	406	407.4	1/2 CORE	0.8	6	-0.01	465	0.5	0.5	10	18	52000	4570	-10	495	5.0	479
274469	MS7	407.4	410	1/2 CORE	0.8	4	-0.01	480	0.8	0.5	7	6	33000	6360	-10	350	5.5	381
274470	MS7	410	412	1/2 CORE	0.7	3	-0.01	505	0.7	0.2	-5	42	23500	2940	-10	145	5.0	170
274471	MS7	412	414	1/2 CORE	0.4	2	-0.01	530	0.4	0.2	-5	-5	23000	2600	-10	66	5.6	185
274472	MS7	414	416	1/2 CORE	0.7	4	-0.01	510	0.6	0.2	-5	7	23000	2430	-10	170	5.7	208
274473	MS7	416	418	1/2 CORE	0.3	4	-0.01	470	0.3	0.2	-5	-5	25000	2870	-10	-20	3.7	111
274474	MS7	418	420	1/2 CORE	0.3	2	-0.01	475	0.2	0.2	-5	17	25500	3570	-10	28	3.3	108
274475	MS7	420	422	1/2 CORE	0.4	2	-0.01	495	0.3	0.2	-5	33	23000	2520	-10	28	3.1	109
274476	MS7	422	424	1/2 CORE	0.5	4	-0.01	560	0.7	0.2	5	14	28000	2800	-10	62	3.2	143
274477	MS7	424	426	1/2 CORE	0.5	3	-0.01	630	0.9	0.4	-5	10	25000	2620	-10	64	3.0	185
274478	MS7	426	428	1/2 CORE	0.4	3	-0.01	845	0.6	0.2	-5	18	28000	1910	-10	44	3.0	138
274479	MS7	428	430	1/2 CORE	0.8	3	-0.01	930	1.2	0.3	6	-5	38500	2410	-10	74	2.1	241
274481	MS7	430	432	1/2 CORE	0.4	6	-0.01	1310	0.5	0.7	7	9	34000	2060	-10	115	2.5	381
274482	MS7	432	434	1/2 CORE	1.2	6	-0.01	745	2.1	0.3	7	18	21500	3120	-10	165	3.7	163

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Be_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274483	MS7	434	436	1/2 CORE	0.4	3	-0.01	820	0.5	0.1	6	-5	23500	2190	-10	52	3.3	113
274484	MS7	436	438	1/2 CORE	0.6	6	-0.01	1440	0.9	0.3	11	6	28500	2060	-10	88	3.1	230
274485	MS7	438	440	1/2 CORE	1	2	-0.01	2010	0.9	-0.1	-5	9	25000	1420	-10	-20	2.6	124
274486	MS7	440	442	1/2 CORE	1	10	-0.01	1270	1.8	0.8	5	26	19800	1740	-10	100	4.4	275
274487	MS7	442	444	1/2 CORE	249.8	4	-0.01	1290	0.65	0.5	-5	30	18200	1565	-10	50	3.6	200
274488	MS7	444	446	1/2 CORE	0.3	3	-0.01	2910	0.3	0.1	-5	23	29000	1110	-10	20	2.0	148
274489	MS7	446	448	1/2 CORE	0.3	2	-0.01	3440	0.2	0.2	-5	-5	36000	2110	-10	42	2.1	190
274490	MS7	448	450	1/2 CORE	0.3	3	-0.01	2810	0.2	-0.1	9	7	35500	1780	-10	32	2.0	116
274491	MS7	450	452	1/2 CORE	0.3	2	-0.01	2370	0.3	-0.1	7	11	37000	1800	-10	40	2.5	123
274563	MS7	451.2	451.2	1/2 CORE														
274492	MS7	452	454	1/2 CORE	0.35	3	-0.01	3220	0.6	-0.1	7	-5	32750	1345	-10	43	2.1	106
274493	MS7	454	456	1/2 CORE	0.2	2	-0.01	2990	-0.1	-0.1	7	-5	31500	940	-10	-20	1.8	98
274494	MS7	456	458	1/2 CORE	-0.1	2	-0.01	3120	-0.1	-0.1	6	-5	35500	970	-10	-20	1.6	104
274495	MS7	458	460	1/2 CORE	0.5	2	-0.01	3020	0.5	-0.1	6	11	33500	930	-10	475	2.0	95
274496	MS7	460	462	1/2 CORE	0.2	2	-0.01	3010	-0.1	-0.1	6	-5	33500	995	-10	42	2.1	94
274497	MS7	462	464	1/2 CORE	0.1	2	-0.01	3000	0.1	-0.1	8	-5	34500	995	-10	-20	2.5	108
274498	MS7	464	466	1/2 CORE	0.5	3	-0.01	3080	0.4	-0.1	6	-5	36000	1440	-10	-20	2.6	118
274499	MS7	466	468	1/2 CORE	0.4	2	-0.01	3070	0.3	-0.1	6	7	38500	1260	-10	48	2.4	136
305901	MS7	468	470.2	1/2 CORE	1.4	3	-0.01	3390	0.2	0.1	9	-5	35000	1060	-10	-20	1.9	144
305902	MS7	470.2	472	1/2 CORE	0.5	2	-0.01	2860	0.2	-0.1	6	-5	29500	900	-10	20	1.9	132
305903	MS7	472	474	1/2 CORE	1.6	2	-0.01	2590	1.7	-0.1	6	-5	32000	1260	-10	110	2.0	132
305904	MS7	474	476	1/2 CORE	0.5	1	-0.01	1870	1.1	-0.1	-5	520	27500	920	-10	22	1.1	87
305905	MS7	476	478	1/2 CORE	0.2	1	-0.01	1910	0.4	0.1	7	70	34500	885	-10	-20	1.6	121
305906	MS7	478	480	1/2 CORE	0.6	1	-0.01	2170	0.2	-0.1	6	15	42000	2390	-10	-20	1.4	149
274564	MS7	478	478	1/2 CORE														
305907	MS7	480	482.5	1/2 CORE	0.2	1	-0.01	2280	0.1	-0.1	7	76	45000	1290	-10	-20	1.5	176
274566	MS7	481.7	481.7	1/2 CORE														
305908	MS7	482.5	484.9	1/2 CORE	0.2	2	-0.01	2580	0.3	-0.1	9	20	58000	1880	-10	72	1.6	193
305909	MS7	484.9	487	1/2 CORE	0.3	1	-0.01	1810	0.3	-0.1	-5	19	42000	1310	-10	36	1.7	139
305910	MS7	487	489	1/2 CORE	0.6	2	-0.01	1670	0.2	-0.1	-5	16	33000	1310	-10	-20	1.8	112
305911	MS7	489	491	1/2 CORE	0.3	2	-0.01	1540	0.1	-0.1	-5	71	31000	1570	-10	-20	2.3	94
305912	MS7	491	493	1/2 CORE	0.5	2	-0.01	2040	0.4	-0.1	-5	13	42000	1060	-10	-20	2.2	131
305913	MS7	493	495	1/2 CORE	0.4	1	-0.01	1550	0.4	-0.1	-5	8	30000	1250	-10	26	1.9	115
305914	MS7	495	497	1/2 CORE	0.7	3	-0.01	1310	0.8	0.1	7	14	31000	1080	-10	76	2.3	108
305915	MS7	497	499	1/2 CORE	0.5	2	-0.01	1390	0.6	0.1	10	17	31000	1080	-10	30	2.1	108
305916	MS7	499	501	1/2 CORE	7	5	-0.01	960	5.2	0.5	8	549	35500	1740	-10	100	4.6	137
305917	MS7	501	503	1/2 CORE	0.9	1	-0.01	905	1.1	0.2	-5	11	28500	1130	-10	140	1.9	227
305918	MS7	503	505	1/2 CORE	0.6	1	-0.01	935	0.7	0.1	-5	-5	30500	1050	-10	80	2.0	222

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Mo_ppm	Pb_ppm	Sb_ppm	Zn_ppm
305919	MS7	505	507	1/2 CORE	0.6	2	-0.01	1025	0.6	0.6	-5	-5	23000	1160	-10	125	1.9	342
305921	MS7	507	509	1/2 CORE	0.9	4	-0.01	1140	0.9	0.7	-5	40	18500	930	-10	160	2.3	281
305922	MS7	509	511	1/2 CORE	1	4	-0.01	1410	1	0.2	8	8	29000	1730	-10	255	2.7	205
305923	MS7	511	513	1/2 CORE	0.5	7	-0.01	1580	0.6	-0.1	10	-5	23500	1400	-10	34	3.2	154
305924	MS7	513	515	1/2 CORE	0.6	2	-0.01	2030	0.5	-0.1	9	-5	28500	1160	-10	100	2.8	184
305925	MS7	515	517	1/2 CORE	0.4	2	-0.01	1855	0.3	-0.1	8	-5	31500	1350	-10	56	2.5	255
305926	MS7	517	519	1/2 CORE	0.4	2	-0.01	1670	0.2	0.1	7	-5	30500	1190	-10	62	2.9	214
305927	MS7	519	521	1/2 CORE	0.4	2	-0.01	1600	0.2	0.4	7	10	31000	1540	-10	125	3.0	331
305928	MS7	521	523	1/2 CORE	0.4	2	-0.01	1350	0.3	0.6	7	8	31000	1540	-10	160	3.1	327
305929	MS7	523	525	1/2 CORE	0.5	3	-0.01	1440	0.3	0.8	13	-5	30000	1290	-10	140	2.8	370
305930	MS7	525	527	1/2 CORE	0.5	2	-0.01	1450	0.3	0.2	10	15	29500	1240	-10	360	3.2	219
305931	MS7	527	529	1/2 CORE	0.3	3	-0.01	1650	0.3	-0.1	-5	-5	33500	1150	-10	26	2.3	128
305932	MS7	529	531	1/2 CORE	2.4	2	-0.01	1490	3.3	0.2	5	30	25500	1170	-10	430	2.1	137
305933	MS7	531	533	1/2 CORE	0.6	2	-0.01	2560	0.1	-0.1	14	14	39500	975	15	-20	1.9	118
305934	MS7	533	535	1/2 CORE	0.3	2	0.02	3320	0.1	-0.1	20	72	42000	990	-10	-20	2.2	123
305935	MS7	535	537	1/2 CORE	0.2	1.5	-0.01	3420	0	-0.1	8	17	39750	928	-10	-20	1.4	143
305936	MS7	537	539	1/2 CORE	0.25	2	-0.01	1760	0.3	-0.1	5	15	31250	1250	-10	-20	2.1	131
305937	MS7	539	541	1/2 CORE	0.3	3	-0.01	1560	0.9	-0.1	5	10	31500	1340	-10	-20	2.1	124
305938	MS7	541	543	1/2 CORE	0.5	3	-0.01	1730	0.9	-0.1	7	-5	31000	1170	-10	-20	1.8	152
274565	MS7	542.6	542.6	1/2 CORE														
305939	MS7	543	545	1/2 CORE	0.7	3	-0.01	1310	2.7	-0.1	5	11	32500	1290	-10	-20	1.8	165
305941	MS7	545	547.5	1/2 CORE	0.5	4	-0.01	670	0.8	-0.1	-5	8	38500	1190	-10	40	2.4	238
305942	MS7	547.5	550	1/2 CORE	0.6	3	-0.01	805	0.7	-0.1	-5	9	34000	1050	-10	32	2.6	196
331702	MS8	186	188	1/2 CORE	1	13		605		1.3			15800	1040		210	8.1	199
331703	MS8	188	190	1/2 CORE	0.3	2		815		0.8			13300	760		89	8.5	193
331704	MS8	190	191.2	1/2 CORE	0.4			875		1.3			13100	870		176	5.6	369
331705	MS8	191.2	193.2	1/2 CORE	0.4			850		1.5			14800	930		169	3.8	494
331707	MS8	193.2	195.2	1/2 CORE	0.2		0.001	480		1			16300	1050		162	3.2	280
331708	MS8	195.2	197.2	1/2 CORE	0.3	2		685		0.5			16600	785		96	3.3	160
331709	MS8	197.2	198.7	1/2 CORE			0.003	342.5		0.1			11000	5480		18	0.3	39
331710	MS8	198.7	200.7	1/2 CORE		2	0.001	515		0.1			10100	1837		26	1.3	44
331711	MS8	200.7	202.7	1/2 CORE	0.3	4		495	0.1	1.4			12000	1280		83	2.1	314
331712	MS8	202.7	204.7	1/2 CORE	0.2			470		0.3			13000	810		91	2.7	122
331713	MS8	204.7	206.7	1/2 CORE	0.15	1	0.001	482.5		0.45			13750	760		136	1.7	183
331714	MS8	230	232	1/2 CORE	0.2	1	0.001	760		0.4			14100	850		94	1.4	187
331715	MS8	232	234	1/2 CORE	0.2			885		0.6			14400	715		224	2.0	201
331716	MS8	234	236	1/2 CORE	0.2	2	0.001	1120		0.5			14500	915		121	1.5	176
331717	MS8	236	238.8	1/2 CORE	0.3	2	0.001	585		1.3			14600	1030		215	1.8	350

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Be_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
331718	MS8	238.8	239.8	1/2 CORE	0.6	6	0.001	565	0.1	5.1		15	23000	2140	14	306	2.1	1335
331719	MS8	239.8	241	1/2 CORE	0.9		0.001	495	0.2	3.7	8	8	34000	2340	36	925	2.2	942
331720	MS8	241	243.7	1/2 CORE	0.3	4		615		1.2		6	13600	1140		222	2.5	338
331721	MS8	243.7	245.3	1/2 CORE	4.2	17	0.002	665	0.3	9.1	9	36	29000	935	37	5050	5.6	2540
331722	MS8	245.3	247.7	1/2 CORE	2.4	16	0.002	590	0.4	13.3	12	58	37500	1350	80	1395	3.9	4240
331723	MS8	247.7	250.2	1/2 CORE	1.4	15	0.001	710		2		13	21500	1070		882	2.1	615
331724	MS8	250.2	250.4	1/2 CORE	2.55	41	0.002	645	0.4	2.9	11	16	41000	533	58	2395	2.2	999
331725	MS8	250.4	252.4	1/2 CORE	0.8	7		880		1		5	20000	765		337	1.9	334
331726	MS8	252.4	254.4	1/2 CORE	0.2			1100		0.3			20000	570		77	1.1	147
331727	MS8	254.4	256.4	1/2 CORE	0.2	1		1050		0.2			18800	590		139	1.0	110
273508	MS8	284	286	1/2 CORE	-0.1	2	0.003	935	0.1	0.4	-5	-5	19300	1000	-10	59	0.6	142
273509	MS8	286	288	1/2 CORE	-0.1	1	0.002	785	-0.1	0.4	-5	-5	17600	840	-10	61	0.5	135
273510	MS8	288	290	1/2 CORE	0.1	2	0.002	790	-0.1	0.8	-5	7	19900	880	-10	212	0.6	237
273511	MS8	290	292.4	1/2 CORE	0.2	6	0.001	575	0.1	0.8	-5	-5	16500	645	-10	181	1.3	278
273512	MS8	292.4	294.4	1/2 CORE	1.1	28	0.005	685	0.4	4.4	16	35	33500	1900	68	500	3.4	1485
273513	MS8	294.4	296.4	1/2 CORE	1.9	40	0.0045	652.5	0.7	1.9	19	103	38166.67	1237	76	367	5.4	678
273514	MS8	296.4	298.4	1/2 CORE	1.6	34	0.004	640	0.6	2.6	18	41	39500	1420	79	382	5.6	971
273515	MS8	298.4	299.5	1/2 CORE	1.7	38	0.004	475	1.6	3.4	17	66	36500	1770	64	594	3.2	995
273516	MS8	299.5	301	1/2 CORE	0.3	16	0.002	535	0.8	0.8	-5	11	21000	975	-10	143	1.3	267
273517	MS8	301	302.3	1/2 CORE	0.3	12	0.001	660	0.6	0.6	-5	9	15200	770	-10	135	1.2	214
273518	MS8	302.3	304.2	1/2 CORE	1.5	26	0.005	570	2.9	1.9	17	72	34500	775	50	264	4.0	617
273519	MS8	304.2	305.8	1/2 CORE	0.2	11	-0.001	595	0.6	0.5	-5	8	18900	1290	-10	60	2.5	107
273520	MS8	305.8	308	1/2 CORE	1.3	27	0.002	630	2.2	3	14	46	38000	1220	62	245	3.4	990
273521	MS8	308	310	1/2 CORE	1	24	0.003	655	0.7	6.5	14	51	35000	1210	32	211	3.7	1890
273522	MS8	310	312	1/2 CORE	2.1	40	0.004	690	0.6	1.7	12	41	43500	1150	37	340	4.7	489
273523	MS8	312	314	1/2 CORE	1.1	20	0.002	685	0.7	1.3	12	37	33500	1600	33	158	4.0	366
273524	MS8	314	316	1/2 CORE	1.5	34	0.004	685	0.5	1.5	12	39	40500	1510	38	200	5.1	483
273525	MS8	316	318	1/2 CORE	1.2	34	0.006	745	0.5	9.5	16	47	40500	1160	33	275	5.4	2460
273526	MS8	318	319.4	1/2 CORE	0.1	9	0.005	445	0.4	0.6	-5	-5	10500	1150	-10	90	1.3	167
273527	MS8	319.4	319.7	1/2 CORE	1.2	31	0.005	605	1.2	5.8	16	46	36500	1130	48	183	4.5	1720
273528	MS8	319.7	320.2	1/2 CORE	0.2	15	0	535	0.6	0.9	-5	7	16500	1220	-10	65	1.4	292
273529	MS8	320.2	320.7	1/2 CORE	1	31	0.005	740	0.6	4	15	46	41000	1190	41	189	4.5	1255
273530	MS8	320.7	322.4	1/2 CORE	0.1	9	0.001	540	0.2	0.3	-5	6	12600	920	-10	47	1.2	97
273531	MS8	322.4	324	1/2 CORE	1.5	44	0.006	655	0.5	3.4	17	55	53500	1400	50	215	4.5	995
273532	MS8	324	326.1	1/2 CORE	1.4	43	0.005	725	0.7	3.2	16	50	47500	1620	51	178	5.7	1030
273533	MS8	326.1	326.6	1/2 CORE	0.1	8	0.002	485	0.2	0.8	-5	8	22500	2040	11	31	1.3	267
273534	MS8	326.6	328.1	1/2 CORE	1.3	47	0.005	720	0.5	3.2	18	37	42000	1700	40	252	6.3	993
273536	MS8	328.1	330	1/2 CORE	0.1	5	-0.001	435	0.1	1	-5	8	16700	1230	-10	117	1.2	326

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
273537	MS8	330	332	1/2 CORE	-0.1	4	0.008	690	-0.1	0.5	-5	8	18600	560	-10	108	1.5	194
273538	MS8	332	334	1/2 CORE	-0.1	6.5	-0.001	631.667	0	0.4	-5	6	16650	650	-10	95	1.0	147
273539	MS8	334	335.4	1/2 CORE	0.1	4	0.001	680	-0.1	0.8	-5	13	16000	805	-10	109	1.1	275
273540	MS8	335.4	337.4	1/2 CORE	1.4	47	0.001	890	0.4	2	17	40	41000	1630	43	374	7.1	702
273541	MS8	337.4	339.4	1/2 CORE	1.7	57	0.003	730	0.5	4.3	19	46	48000	1550	46	369	6.7	1540
273542	MS8	339.4	340.6	1/2 CORE	0.7	9	-0.001	770	0.8	5.6	-5	17	17500	835	10	776	2.0	1920
273543	MS8	340.6	342.6	1/2 CORE	-0.1	5	-0.001	645	0.2	0.2	-5	-5	14000	465	-10	103	1.5	61
273544	MS8	342.6	344.2	1/2 CORE	-0.1	5.5	-0.001	625	0	0.45	-5	9	18700	783	-10	74	1.5	151
273545	MS8	344.2	346.2	1/2 CORE	1.8	43	0.004	785	0.5	5.1	19	26	37500	1200	76	1455	9.9	1625
273546	MS8	346.2	348.2	1/2 CORE	1.2	43	0.004	750	0.5	2.7	16	30	35000	1540	75	397	9.3	776
273547	MS8	348.2	350.2	1/2 CORE	1.1	44	0.006	715	0.5	4.7	17	39	41000	2920	73	309	9.0	1300
273548	MS8	350.2	352.2	1/2 CORE	1.5	67	0.007	695	0.55	8.45	21	62	42000	1725	75	334	12.0	2635
273549	MS8	352.2	354.2	1/2 CORE	1	54	0.002	660	0.6	2.1	16	34	36500	1340	70	146	10.5	715
273550	MS8	354.2	356.2	1/2 CORE	1.7	95	0.002	670	0.5	0.9	24	36	48500	1710	72	135	17.0	323
273551	MS8	356.2	358.3	1/2 CORE	1.4	125	0.0015	705	0.6	0.6	19	33	51000	1470	77	160	17.8	188
273552	MS8	358.3	359.6	1/2 CORE	1.2	88	0.004	660	0.7	1	20	87	39000	1880	57	143	14.4	269
273553	MS8	359.6	361.6	1/2 CORE	3.2	3210	0.012	470	0.8	37.4	17	43	40500	3680	48	2090	12.6	5650
273554	MS8	361.6	363.7	1/2 CORE	1.5	600	0.01	775	0.5	7.3	17	36	48500	2530	56	654	16.0	1085
273555	MS8	363.7	365.7	1/2 CORE	1	212	0.022	710	0.8	3.1	20	64	44000	1700	75	404	17.4	449
273556	MS8	365.7	367.7	1/2 CORE	0.3	273	0.016	465	0.7	0.3	56	43	85000	7730	74	92	13.5	97
273557	MS8	367.7	369.3	1/2 CORE	0.8	260	0.0245	597.5	0.9	4.1	75	60	55000	8700	75	367	13.8	533
273558	MS8	369.3	371.6	1/2 CORE	0.5	183	0.007	755	0.6	2.8	24	27	41000	1400	70	239	16.9	388
273559	MS8	371.6	373.2	1/2 CORE	1.1	161	0.004	960	0.5	6.6	18	11	33500	2270	59	821	12.1	823
273560	MS8	373.2	373.7	1/2 CORE	8.5	350	0.007	845	1.9	126	27	34	36500	1720	71	7050	20.2	15000
273561	MS8	373.7	374.1	1/2 CORE	0.2	6480	0.0565	295	0.3	0.3	15	-5	63500	3610	18	40	8.1	94
273562	MS8	374.1	376.1	1/2 CORE	-0.1	1050	0.003	1180	0.1	0.4	-5	-5	17500	1180	-10	42	6.3	67
273563	MS8	376.1	378	1/2 CORE	0.033	119.67	-0.00033	1253.33	0.1333	6.767	-5	-5	19266.67	1650	-10	97	4.7	895
273564	MS8	378	380	1/2 CORE	-0.1	136	-0.001	1320	-0.1	4.9	-5	-5	19900	1590	-10	142	3.7	655
273565	MS8	380	382	1/2 CORE	-0.1	87	0.001	995	-0.1	1.9	-5	5	20000	1200	-10	86	4.4	305
273566	MS8	382	384	1/2 CORE	-0.1	60	0.004	1000	-0.1	4.4	-5	23	20000	1160	-10	67	4.8	611
273568	MS8	384	386	1/2 CORE	0.3	39	0.019	1260	-0.1	3.7	-5	6	16900	1260	-10	380	4.0	578
273569	MS8	386	388	1/2 CORE	0.1	95	0.0465	1190	0.1	1.1	-5	22	17900	1070	-10	263	4.9	186
273570	MS8	388	390	1/2 CORE	-0.1	58	0.002	1220	-0.1	0.2	-5	5	20500	1590	-10	20	3.2	53
273571	MS8	390	392	1/2 CORE	-0.1	478	0.004	950	-0.1	0.5	6	-5	22500	1600	-10	17	3.6	100
273572	MS8	392	394	1/2 CORE	-0.1	65	0.002	835	-0.1	0.4	-5	-5	27000	1620	-10	35	2.9	77
273573	MS8	394	396	1/2 CORE	-0.1	40	0.002	835	-0.1	0.7	-5	10	29000	1200	-10	60	3.1	115
273574	MS8	396	398	1/2 CORE	-0.1	44	0.001	1040	-0.1	0.2	-5	-5	21500	635	-10	12	3.6	46
273575	MS8	398	400	1/2 CORE	0.2	617	0.001	1030	-0.1	1.5	-5	-5	21500	1410	-10	108	4.4	214

SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
273576	MS8	400	402	1/2 CORE	-0.1	455	-0.001	1140	-0.1	0.4	-5	-5	26000	1920	-10	58	3.9	81
273577	MS8	402	404	1/2 CORE	0.4	496	-0.001	795	-0.1	1	-5	-5	33500	1180	-10	170	3.4	168
273578	MS8	404	406	1/2 CORE	-0.1	137	-0.001	735	-0.1	0.3	-5	-5	25500	1040	-10	16	2.8	70
273579	MS8	406	408	1/2 CORE	-0.1	49	-0.001	1040	-0.1	1.3	-5	5	14000	1060	-10	35	3.3	174
273580	MS8	408	410	1/2 CORE	-0.1	21	-0.001	875	-0.1	0.8	-5	-5	25250	1410	-10	149	3.1	135
273581	MS8	410	412	1/2 CORE	5.3	235	-0.001	920	3.6	8.9	-5	-5	30500	1140	-10	3020	4.2	1140
273582	MS8	412	414	1/2 CORE	0.3	98	0.001	795	0.6	1.5	-5	6	24500	2320	-10	239	2.7	228
273583	MS8	414	416	1/2 CORE	-0.1	447	-0.001	595	0.1	0.8	-5	6	16900	2290	-10	53	2.6	125
273584	MS8	416	418	1/2 CORE	-0.1	91	-0.001	1000	-0.1	4.4	-5	-5	18200	2350	-10	55	3.2	629
273585	MS8	418	420	1/2 CORE	-0.1	37	0.002	1260	-0.1	0.2	-5	-5	18300	2210	-10	25	2.8	61
273586	MS8	420	422	1/2 CORE	-0.1	22	0.001	1190	-0.1	3.7	-5	-5	22500	2700	-10	86	2.3	529
273587	MS8	422	424	1/2 CORE	0.3	21	0.001	1180	-0.1	1.6	-5	-5	16400	1800	-10	229	2.9	264
273588	MS8	424	426	1/2 CORE	0.1	28	-0.001	1295	-0.1	2.3	-5	-5	17000	1855	-10	196	2.7	329
273589	MS8	426	428	1/2 CORE	-0.1	16	-0.001	1290	-0.1	0.3	-5	-5	16100	1650	-10	34	2.6	84
273590	MS8	428	430	1/2 CORE	-0.1	13	-0.001	1110	-0.1	0.3	-5	5	17100	2070	-10	20	2.8	67
273591	MS8	430	432	1/2 CORE	-0.1	11	-0.001	895	-0.1	0.9	-5	-5	29500	1770	-10	15	2.4	155
273592	MS8	432	434	1/2 CORE	-0.1	13	0.002	1070	-0.1	0.1	-5	-5	24500	1160	-10	15	2.6	44
273593	MS8	434	436	1/2 CORE	0.2	12	-0.001	1160	-0.1	13.1	-5	6	16800	1800	-10	53	2.8	1630
273594	MS8	436	438	1/2 CORE	-0.1	10	-0.001	1050	-0.1	2	-5	-5	17600	2180	-10	73	2.8	272
273595	MS8	438	440	1/2 CORE	0.6	7	0.01	1020	-0.1	2.5	-5	6	18300	1950	-10	201	3.1	346
273596	MS8	440	442	1/2 CORE	1.6	11	0.005	1350	0.1	2.8	-5	15	18100	1500	-10	422	3.5	734
273597	MS8	442	444	1/2 CORE	1.4	10	0.003	1325	0.2	2.6	-5	9	18900	1350	-10	236	4.1	550
273599	MS8	444	446.4	1/2 CORE	1.1	13	0.004	1540	0.2	3.6	-5	9	14100	1010	-10	302	3.8	732
273600	MS8	446.4	446.9	1/2 CORE	1.3	16	0.006	1710	0.3	19.4	-5	9	19000	3090	-10	282	4.7	4900
273915	MS8	446.9	448.9	1/2 CORE	2.2	92	0.008	890	1.1	4.4	17	29	38500	2690	51	437	10.4	1020
273916	MS8	448.9	450.9	1/2 CORE	2.4	212	0.007	945	1.8	5	17	44	31000	2830	57	449	12.0	1230
273917	MS8	450.9	451.8	1/2 CORE	2.7	312	0.007	955	1.4	7.4	21	64	26500	2200	68	588	15.8	2040
273918	MS8	451.8	453	1/2 CORE	2.1	97.5	0.008667	540	0.65	8.4	14.5	33	30750	2020	60	499	13.5	2030
273919	MS8	453	455	1/2 CORE	2.3	112	0.005	570	0.6	14.8	15	37	28500	1940	58	709	12.9	3700
273920	MS8	455	457	1/2 CORE	1.5	162	0.006	755	0.7	3.7	18	46	30500	2020	74	439	16.3	1060
273921	MS8	457	459	1/2 CORE	1.2	70.333	0.006	587.5	0.7	1.8	15.3	51	36333.33	2037	86	396	16.2	679
273922	MS8	459	461	1/2 CORE	1.6	125	0.005	600	0.7	2.8	16	46	35500	2190	77	429	12.6	695
273923	MS8	461	462.4	1/2 CORE	1.4	173	0.007	415	0.7	2	19	56	86500	4620	67	281	23.7	433
273924	MS8	462.4	464.3	1/2 CORE	1.5	135	0.007	545	0.8	7.7	19	44	56000	3580	72	884	19.7	1705
273925	MS8	464.3	466	1/2 CORE	0.9	70	0.007	580	0.8	3.9	20	52	32000	1210	76	652	18.3	1355
274568	MS8	465.8	465.8	1/2 CORE														
273926	MS8	466	468	1/2 CORE	1.1	112	0.017	600	0.8	3.4	29	59	38500	1150	77	617	25.6	1165
273927	MS8	468	470	1/2 CORE	1.1	68	0.01	630	1	4	23	112	32500	1220	82	631	16.6	1350

273928	MS8	470	472	1/2 CORE	1	58	0.012	620	1	2.9	19	61	34000	1070	84	555	14.4	982
273929	MS8	472	474	1/2 CORE	0.9	53	0.011	640	1	2.7	19	58	34000	920	84	434	13.3	912
273930	MS8	474	476	1/2 CORE	0.8	50	0.008	625	1.1	2.4	19	94	34000	1000	82	309	12.4	844
273931	MS8	476	478	1/2 CORE	0.6	44	0.01	650	0.8	1.6	18	56	33500	1260	94	150	11.4	570
273932	MS8	478	480	1/2 CORE	0.6	43	0.008	675	1.1	1.4	17	52	33000	1310	80	207	10.1	481
273933	MS8	480	482	1/2 CORE	0.5	36	0.006	785	2	0.8	14	45	31000	1810	65	177	7.7	244
273934	MS8	482	484	1/2 CORE	0.5	27	0.006	1040	2.3	0.4	15	43	26000	1190	52	129	5.9	128
331728	MS8	484	486	1/2 CORE	1	26	0.003	1140	2	1.2	9	30	26500	1490	52	380	4.7	381
331729	MS8	486	487.7	1/2 CORE	1.9	46	0.0055	830	1.4	2	13	27	45000	1560	55	1645	6.7	622
331730	MS8	487.7	489	1/2 CORE	1.2	78	0.004	1460	0.8	0.7	14	33	54500	825	77	275	13.5	284
331732	MS8	489	491	1/2 CORE	1.2	51	0.002	545	0.9	3	14	29	41500	1740	76	632	7.0	866
331733	MS8	491	493	1/2 CORE	0.9	44	0.004	750	0.8	1.1	16	55	39500	1310	95	252	11.8	426
331734	MS8	493	495	1/2 CORE	1.3	43	0.004	700	0.7	1.3	14	48	44500	1420	87	414	13.4	480
331735	MS8	495	497	1/2 CORE	0.6	62	0.002333	237.5	0.85	0.25	26.5	55	104500	6005	67	208	9.2	151
331736	MS8	497	499	1/2 CORE	0.4	76	0.003	475	1.1	0.5	59	68	69500	3800	84	393	12.6	234
331737	MS8	499	501	1/2 CORE	1.3	84	0.004	400	0.7	1.8	29	44	81500	5110	61	632	13.7	448
331738	MS8	501	503	1/2 CORE	0.6	100	0.004	625	0.6	0.8	14	34	61500	2110	80	185	14.6	251
331739	MS8	503	505	1/2 CORE	0.7	39	0.002	640	0.6	1	16	91	34500	1220	87	137	13.0	325
331740	MS8	505	507	1/2 CORE	1.2	43	0.005	645	0.6	0.8	15	45	34500	1290	89	124	14.8	252
331741	MS8	507	509	1/2 CORE	1.1	48	0.003	640	0.7	1.2	15	70	32500	1610	86	283	15.3	346
331742	MS8	509	511	1/2 CORE	0.9	34	0.002	690	0.7	0.6	16	51	34000	850	95	116	12.5	228
331743	MS8	511	513	1/2 CORE	1	33	0.005	625	0.6	1.1	14	57	32500	1570	86	134	12.2	355
331744	MS8	513	515	1/2 CORE	1.2	83	0.005	575	0.7	2.5	14	45	34500	1820	93	321	14.3	850
331745	MS8	515	517	1/2 CORE	1.8	76	0.003	575	0.8	6.9	15	48	34000	1760	91	486	17.0	1945
331746	MS8	517	519	1/2 CORE	2.8	60	0.0065	610	0.5	9.4	16	50	33000	2080	76	593	16.3	2490
331747	MS8	519	521	1/2 CORE	3.6	102	0.004	630	0.5	10	15	58	33000	1970	98	688	18.6	2880
331748	MS8	521	523	1/2 CORE	4.3	92	0.003	640	0.6	10.7	16	53	34000	2330	95	709	17.7	2920
331749	MS8	523	525	1/2 CORE	4.7	73	0.004	760	0.7	9.6	14	72	33000	2810	87	738	17.6	2700
331750	MS8	525	527	1/2 CORE	5.4	63	0.006	630	1	10.7	14	73	33000	2800	90	680	18.6	2910
331751	MS8	527	528	1/2 CORE	6.4	70	0.004	615	0.9	11.5	15	75	31000	2320	95	929	16.5	3210
331752	MS8	528	530	1/2 CORE	5.1	89	0.004	630	0.9	11.3	14	53	32000	2530	92	703	16.3	3160
331753	MS8	530	532	1/2 CORE	6.3	73	0.003	630	0.9	10.8	14	57	32500	2460	105	777	19.1	2960
331754	MS8	532	534	1/2 CORE	5.9	53	0.004	645	0.8	10.1	13	51	31500	2580	96	867	17.1	2880
331755	MS8	534	536	1/2 CORE	5.5	48	0.004	630	0.6	7.3	12	36	32500	3080	89	838	17.5	2120
331756	MS8	536	538	1/2 CORE	5.5	42	0.004	635	0.7	6.8	13	33	32500	3210	83	928	17.4	1990
331757	MS8	538	540	1/2 CORE	7	43	0.004	670	0.8	8.9	13	48	33500	2350	93	1030	19.8	2590
273935	MS8	540	542	1/2 CORE	4.3	55	0.0075	630	1	7.8	17	49	32000	2460	87	830	16.8	2260
273936	MS8	542	544	1/2 CORE	5.1	68	0.013	625	0.9	6.2	18	40	33500	3570	78	1270	17.7	1820
273937	MS8	544	546	1/2 CORE	4.75	82	0.008	635	0.9	8.4	19	46	34000	3760	78	818	18.4	2570

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
273938	MS8	546	548	1/2 CORE	5.3	86	0.008	605	0.8	10.8	18	52	32000	5740	69	1095	17.7	3050
273939	MS8	548	550	1/2 CORE	6.75	85.5	0.009	615	0.95	11.75	19.5	56	34500	8070	73	1225	17.3	3460
273940	MS8	550	552	1/2 CORE	9.1	128	0.018	650	1.3	13.8	24	102	34500	7510	65	1740	23.0	3950
273941	MS8	552	554	1/2 CORE	7.7	141	0.011	705	1.3	15.3	20	70	33000	3730	96	1290	28.3	4170
273942	MS8	554	556	1/2 CORE	5.6	96	0.007	750	1.5	11	17	49	31000	3660	61	868	25.1	2750
273943	MS8	556	558	1/2 CORE	3.75	77.5	0.008	810	1	6.6	16	31	32000	5965	50	535	20.8	1738
273944	MS8	558	559	1/2 CORE	4.9	123	0.026	880	1	12.9	17	83	33000	6690	51	897	22.7	3640
273945	MS8	559	560	1/2 CORE	5.5	127	0.012	935	1.1	16.5	15	44	29500	6260	60	1130	22.0	4360
273947	MS8	560	561	1/2 CORE	5.5	141	0.015	1045	1.1	15.3	15	43	34000	9860	48	1010	26.4	3940
273948	MS8	561	561.9	1/2 CORE	10.1	345	0.008	1220	1.5	24.7	19	49	43500	8570	82	2660	39.5	6600
273949	MS8	561.9	562.9	1/2 CORE	26.7	936	0.006	640	2.1	74.5	30	103	119000	36500	79	7080	45.1	15800
274569	MS8	561.9	561.9	1/2 CORE														
273950	MS8	562.9	563.9	1/2 CORE	19.4	607	0.006	465	1.8	46	53	50	131000	50500	73	6000	50.5	9980
273951	MS8	563.9	565.2	1/2 CORE	27.3	985	0.013	760	1.4	36.7	51	81	118000	28500	86	5860	65.9	8440
273952	MS8	565.2	567	1/2 CORE	11.6	282	0.005	435	1.5	22.6	63	29	128000	59000	67	2940	27.0	5580
273953	MS8	567	569	1/2 CORE	13.95	439	0.007	1040	1.75	38.15	21.5	66	47500	9035	91	2065	40.1	11500
274570	MS8	568.8	568.8	1/2 CORE														
273954	MS8	569	570.8	1/2 CORE	9.6	447	0.006	935	1.9	20.2	22	66	41500	5020	77	2700	34.5	4930
273955	MS8	570.8	571.4	1/2 CORE	4.3	161	0.007	2550	1.4	25.2	14	50	25500	2710	28	1235	28.0	6100
273956	MS8	571.4	572.5	1/2 CORE	6	236	0.006	960	2.1	35.2	21	64	42000	3790	61	1735	25.1	8120
273957	MS8	572.5	573.8	1/2 CORE	10.6	228	0.005	895	1.1	49.9	22	54	62000	5260	54	3210	29.5	11600
273958	MS8	573.8	575.8	1/2 CORE	10.4	268	0.003	507.5	0.9	29.6	35	55	89000	12100	51	4750	26.8	5810
273959	MS8	575.8	576.8	1/2 CORE	9	144	0.009	105	0.9	12.4	41	31	101000	42500	44	3890	20.1	2820
273960	MS8	576.8	578.5	1/2 CORE	14.8	160	0.01	305	1.2	48.4	24	95	111000	14100	59	6340	25.7	11600
273961	MS8	578.5	580.5	1/2 CORE	12.3	181	0.016	675	1.2	46.9	17	113	47000	3930	48	6270	23.1	12200
273962	MS8	580.5	581.7	1/2 CORE	7.3	143	0.018	790	1.4	37.4	16	102	44000	4020	39	3360	11.4	9620
273963	MS8	581.7	582.3	1/2 CORE	14	175	0.027	1660	2.9	76.2	15	267	44000	3280	26	3950	14.8	17800
273964	MS8	582.3	583.4	1/2 CORE	14.4	142	0.019	930	0.9	46.1	28	244	59000	4260	40	6210	15.4	10200
273965	MS8	583.4	585	1/2 CORE	1.5	31	0.002	2580	0.2	4.4	6	10	15700	1420	-10	967	4.4	881
273966	MS8	585	586.8	1/2 CORE	0.4	20	0.003	2260	0.1	1.4	5	6	16200	1200	-10	214	3.0	295
273967	MS8	586.8	588.8	1/2 CORE	0.3	13	0.002	1860	-0.1	0.7	-5	-5	14600	1140	-10	129	2.1	135
273968	MS8	588.8	590.1	1/2 CORE	0.35	9.5	0	2080	-0.1	1.1	-5	-5	14250	1880	-10	445	2.4	186
273969	MS8	590.1	590.8	1/2 CORE	0.6	12	0.002	3660	-0.1	32	-5	9	15200	3180	-10	583	2.6	4890
273970	MS8	590.8	592.8	1/2 CORE	0.2	15	0.002	1720	-0.1	0.1	-5	-5	13800	1340	-10	42	2.2	53
273971	MS8	592.8	594.8	1/2 CORE	0.2	12	-0.001	1580	-0.1	-0.1	5	-5	16500	1380	-10	20	1.6	41
273972	MS8	594.8	596.8	1/2 CORE	0.1	12	0.003	1680	-0.1	0.1	-5	-5	18900	2040	-10	16	1.9	53
273973	MS8	596.8	598.8	1/2 CORE	0.3	40	0.005	1680	-0.1	-0.1	7	-5	18900	1710	-10	17	3.0	47
273974	MS8	598.8	600.8	1/2 CORE	0.2	16	0.003	1580	-0.1	-0.1	-5	-5	19100	1990	-10	19	2.3	71

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
274571	MS8	604.7	604.7	1/2 CORE														
273976	MS8	644.2	646.2	1/2 CORE	0.2	9	0.003	2410	-0.1	0.9	-5	10	26500	1950	-10	154	2.0	266
273977	MS8	646.2	648.2	1/2 CORE	0.5	9	0.003	3440	0.1	0.9	-5	18	30000	2170	-10	677	1.8	263
273978	MS8	648.2	650.2	1/2 CORE	0.3	8	0.002	5190	0.1	-0.1	-5	41	34000	1940	-10	290	1.5	46
274572	MS8	649.3	649.3	1/2 CORE														
273979	MS8	650.2	651.6	1/2 CORE	0.55	42.5	0.005	6440	0.6	1.1	0	10	35000	2070	-10	204	4.1	502
273980	MS8	651.6	653.2	1/2 CORE	2.5	31	0.003	1710	1.8	18	14	101	76000	3980	15	1260	5.8	4660
273981	MS8	653.2	653.7	1/2 CORE	5.65	63.5	0.006	370	3.6	46.6	23	177	45500	4055	31	3235	8.0	11650
273982	MS8	653.7	654.3	1/2 CORE	7.9	42	0.011	1460	4.2	56.5	18	254	41000	1750	17	4430	12.0	13000
273983	MS8	654.3	655.6	1/2 CORE	6.5	53	0.009	985	4.7	33.3	26	395	70500	3770	23	2730	10.4	7350
273984	MS8	655.6	657.6	1/2 CORE	2.8	35	0.011	2560	2.4	12.4	13	147	37000	2130	-10	1080	7.1	2780
273985	MS8	657.6	659.6	1/2 CORE	2.3	30.5	0.004	2740	1.5	7.85	12	72	37750	1910	1	600	7.1	1750
273986	MS8	659.6	661.6	1/2 CORE	1.9	18	0.0035	2780	0.8	6.7	7	150	31000	1430	-10	1285	5.5	1475
273987	MS8	661.6	663.6	1/2 CORE	0.9	17	0.003	3380	0.4	5.3	6	66	33500	1280	-10	554	4.0	1145
273988	MS8	663.6	665.1	1/2 CORE	1	14	0.003	3290	0.5	7.6	8	136	36500	2060	-10	816	4.0	1745
273989	MS8	665.1	666.4	1/2 CORE	10.3	52	0.021	3480	15.7	8.4	76	993	67500	4130	-10	1115	4.6	1800
273990	MS8	666.4	668.4	1/2 CORE	0.3	13	0.004	3440	0.8	1.4	11	8	61000	4140	-10	141	2.4	378
273991	MS8	668.4	670	1/2 CORE	0.3	7	0.003	3570	0.3	2.5	8	25	51000	3700	-10	217	2.5	547
273992	MS8	670	672	1/2 CORE	0.6	14	-0.001	6680	0.2	11.6	22	31	59500	3790	-10	560	3.7	-5
274573	MS8	670	670	1/2 CORE														
273993	MS8	672	674	1/2 CORE	0.5	27	-0.001	2360	0.1	2.8	23	41	68500	3940	-10	334	4.8	693
273994	MS8	674	676	1/2 CORE	0.5	28.5	-0.001	655	0.25	1.1	35	94	85500	4760	-10	120	4.5	456
273995	MS8	676	678	1/2 CORE	0.3	13	-0.001	530	0.1	1.2	13	57	52000	3020	-10	115	3.2	365
273996	MS8	678	680	1/2 CORE	0.4	15	-0.001	815	0.2	2.2	15	100	53000	3540	-10	246	4.4	549
273997	MS8	680	682	1/2 CORE	0.5	16	-0.001	1800	0.2	2.4	13	51	50000	4400	-10	338	4.6	582
273998	MS8	682	683.3	1/2 CORE	0.4	6	-0.001	3090	-0.1	3.1	6	11	34000	3390	-10	610	2.0	670
273999	MS8	683.3	684.3	1/2 CORE	0.6	10	-0.001	4230	-0.1	3.6	6	14	46000	3310	-10	431	2.2	676
274000	MS8	684.3	686.1	1/2 CORE	1	15	0.01	3930	0.4	5.8	7	46	45500	3920	-10	1015	2.5	1060
330127	MS8	686.1	688	1/2 CORE	0.6	12.5	-0.001	2760	0.1	4.6	-5	38	36000	4330	-10	465	2.9	922
330128	MS8	688	690	1/2 CORE	1.5	688	0.015	1580	0.7	6.3	25	135	43500	3910	-10	1080	6.0	1130
330129	MS8	690	692	1/2 CORE	0.7	129	-0.001	3240	0.1	16	6	72	27000	2310	-10	375	3.3	2700
330130	MS8	692	692.9	1/2 CORE	0.5	49	-0.001	3630	-0.1	4.8	-5	19	39000	2370	-10	352	2.4	939
330131	MS8	692.9	694	1/2 CORE	0.3	27	-0.001	3280	-0.1	4.4	-5	10	29000	1850	-10	163	2.0	738
330132	MS8	694	695.6	1/2 CORE	0.3	34	-0.001	3600	-0.1	6	-5	19	30000	2140	-10	163	2.1	960
330133	MS8	695.6	696.5	1/2 CORE	0.5	29	-0.001	3660	0.2	16	-5	68	22500	1400	-10	232	2.6	3240
330134	MS8	696.5	697.6	1/2 CORE	6	90	0.0045	2620	3.4	41.1	21	310	43000	1850	41	2600	8.8	9080
330135	MS8	697.6	698.6	1/2 CORE	4.9	101	-0.001	1680	3.6	27.7	12	137	38000	4290	29	2580	9.8	6130
330136	MS8	698.6	700	1/2 CORE	2.4	44	-0.001	2200	1.7	11.6	9	31	35500	5710	22	764	6.2	2810

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
330137	MS8	700	701.8	1/2 CORE	1.9	39	-0.001	1940	2.3	2.7	5	16	20000	1710	14	406	5.2	681
330138	MS8	701.8	702.9	1/2 CORE	2.3	34	-0.001	1970	1.3	10.7	6	62	34500	2840	17	667	3.9	2690
330139	MS8	702.9	704.9	1/2 CORE	0.5	25	-0.001	2230	0.3	1.8	-5	6	20000	2080	-10	175	1.9	481
330140	MS8	704.9	706.4	1/2 CORE	0.4	11	-0.001	1970	0.2	0.6	-5	8	17000	1840	-10	72	1.8	176
330141	MS8	706.4	707.6	1/2 CORE	0.7	12	-0.001	1940	0.3	2.6	-5	10	18900	2030	-10	211	1.8	645
330142	MS8	707.6	709	1/2 CORE	3.3	69	0.01	1980	2.8	7.1	11	81	28500	4430	15	800	3.5	1680
330144	MS8	709	710.2	1/2 CORE	1.6	45	-0.001	1820	1.8	6.6	5	40	28000	4670	16	540	2.8	1595
330145	MS8	710.2	712.2	1/2 CORE	0.4	31	-0.001	2370	1.3	1	-5	-5	20000	2690	-10	109	2.5	272
330146	MS8	712.2	714.2	1/2 CORE	0.9	103	-0.001	2230	1.4	4	6	12	27500	2490	13	331	3.1	865
330147	MS8	714.2	715.6	1/2 CORE	5.3	131	0.01	1240	3.2	18.4	15	106	57000	4030	69	1560	13.3	4810
330148	MS8	715.6	716.4	1/2 CORE	6	160	-0.001	590	3.8	25.4	16	128	85000	7710	74	1340	9.6	6430
330149	MS8	716.4	718.6	1/2 CORE	2.7	147	0.01	1350	3.3	3.2	16	56	41000	3280	76	251	8.3	820
330150	MS8	718.6	719.6	1/2 CORE	3.6	180	0.01	465	3.3	21.9	16	73	75500	4430	62	788	8.5	5770
330151	MS8	719.6	721.6	1/2 CORE	2.9	187	0.01	1090	2.7	7.3	14	59	37000	3150	63	651	11.8	1980
330152	MS8	721.6	723.6	1/2 CORE	1.2	92.5	-0.001	1945	1.2	2.85	0.5	24	24250	1965	20	281	5.9	771
330153	MS8	723.6	725.6	1/2 CORE	2.5	96	-0.001	2160	1.4	11.6	9	52	33000	3670	32	634	8.4	3040
330154	MS8	725.6	727.6	1/2 CORE	6.25	133	-0.001	1670	2.8	23.45	19	96	41750	3665	61	1805	17.1	6020
330155	MS8	727.6	729.6	1/2 CORE	5.5	131	-0.001	1520	2.3	21.9	19	116	41500	2940	68	2200	11.4	6030
330156	MS8	729.6	731.6	1/2 CORE	3.6	330	-0.001	1980	1.8	12.9	26	61	47500	3540	46	1225	14.8	3520
330157	MS8	731.6	733.6	1/2 CORE	3.4	109	-0.001	2160	2.75	16.25	19.5	85	44500	4120	43	1360	10.3	4295
330158	MS8	733.6	734.2	1/2 CORE	3.9	98	-0.001	2286.67	1.95	27.2	14	126	38000	2650	35	1553	8.9	6780
330159	MS8	734.2	735.2	1/2 CORE	1.3	73	-0.001	1020	1.3	6.9	22	34	72000	5060	49	483	3.6	1760
330160	MS8	735.2	736.5	1/2 CORE	5.5	101	0.01	2050	2.5	52	32	409	52000	5640	65	2880	10.4	14000
330161	MS8	736.5	737.6	1/2 CORE	2.2	67	-0.001	2130	2.2	10.2	17	77	48000	7810	40	715	8.0	2670
330162	MS8	737.6	739.6	1/2 CORE	1.7	53	-0.001	2500	1.5	9	10	47	40000	3370	28	550	6.2	2350
330163	MS8	739.6	741.6	1/2 CORE	1.5	64	-0.001	1890	0.9	4	11	25	31000	2770	30	393	9.8	988
330164	MS8	741.6	743.2	1/2 CORE	1.3	69	-0.001	2090	1.2	6.1	15	34	32500	2610	38	371	8.6	1465
330165	MS8	743.2	743.7	1/2 CORE	1.4	63	-0.001	1550	0.7	15.8	9	41	29500	3930	32	490	7.7	3480
330167	MS8	743.7	745.7	1/2 CORE	1.5	99	-0.001	2060	1.2	7.9	20	39	35500	2570	57	574	9.9	1935
330168	MS8	745.7	747.7	1/2 CORE	1.7	115	0.01	1930	1.5	9.7	22	36	36500	2360	63	669	11.5	2120
330169	MS8	747.7	749	1/2 CORE	0.8	61	-0.001	2040	0.7	3.7	5	22	31000	3030	28	251	5.5	845
330170	MS8	749	750.1	1/2 CORE	1.1	59	-0.001	1840	0.8	7.6	9	24	28500	2010	33	338	6.4	1750
330171	MS8	750.1	750.6	1/2 CORE	1.6	98	0.0045	1840	1	10.6	11.5	24	28750	1310	39	435	8.0	2465
330172	MS8	750.6	752.6	1/2 CORE	2.3	104	0.01	1860	1	11.7	17	36	34000	2450	53	595	10.3	3010
330173	MS8	752.6	754.1	1/2 CORE	1.7	62	-0.001	2080	0.7	6.2	12	20	30500	1450	29	338	6.1	1615
330174	MS8	754.1	756.1	1/2 CORE	0.5	21	-0.001	2740	0.2	0.9	-5	-5	17300	1600	-10	106	2.6	252
330175	MS8	756.1	758.3	1/2 CORE	0.9	24	-0.001	2700	0.3	2.1	-5	14	24000	2050	10	218	3.4	552
330176	MS8	758.3	760	1/2 CORE	1.9	158	-0.001	2290	0.5	8.6	9	32	39500	3090	24	543	6.3	2220

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SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
330177	MS8	760	762	1/2 CORE	2.3	127.5	0.01	1565	1.55	3.1	16	63	40000	2465	71	294	10.1	858
330178	MS8	762	764	1/2 CORE	3.6	192	0.0045	1570	1.7	10.9	11	75	36000	2590	78	761	12.1	2980
330179	MS8	764	766	1/2 CORE	4	325	0.01	1540	1.8	10.9	26	78	41500	2430	57	696	11.7	3140
330180	MS8	766	767.6	1/2 CORE	2.6	120	0.0045	1880	1.7	2	18	81	37500	2440	55	175	9.6	512
330181	MS8	767.6	769.5	1/2 CORE	2	75	-0.001	2830	0.8	4.3	8	21	33000	2680	13	447	4.6	1085
330182	MS8	769.5	770.9	1/2 CORE	0.7	34	-0.001	3660	0.2	2.6	-5	10	24000	3160	-10	151	2.5	662
330183	MS8	770.9	772.8	1/2 CORE	2.2	92	-0.001	2790	0.5	9.8	12	37	44000	2510	23	731	5.8	2470
330184	MS8	772.8	774.8	1/2 CORE	7.7	200	0.01	2220	2.2	32.5	25	192	39500	2790	76	3050	14.0	8360
330186	MS8	774.8	776.8	1/2 CORE	5.2	1177.5	0.01	2045	1.8	20.9	18.5	71	40250	2625	92	1703	15.4	3885
330187	MS8	776.8	778.8	1/2 CORE	9	526	-0.001	1060	2.2	26.2	41	169	93500	3620	77	1665	16.1	6200
330188	MS8	778.8	779.2	1/2 CORE	10.9	214	-0.001	1640	1.5	11.6	24	110	60000	3270	63	947	20.4	2610
330189	MS8	779.2	779.7	1/2 CORE	6.4	381	0.01	1110	2.8	29.9	39	177	102000	3800	64	1680	17.1	7430
330190	MS8	779.7	780.3	1/2 CORE	24.8	13500	0.42	1460	45.1	60.1	61	278	90000	4540	43	5180	20.9	13800
330191	MS8	780.3	781.1	1/2 CORE	16.9	171	0.02	3730	157	36.8	20	201	56000	2620	20	1010	13.1	8810
330192	MS8	781.1	781.7	1/2 CORE	3.7	231	0.01	3530	8.4	15	22	89	43500	2430	32	702	8.0	3320
330193	MS8	781.7	782.4	1/2 CORE	3.8	466	0.015	3960	4.4	55.2	19	166	47500	2420	27	1590	7.2	11400
330194	MS8	782.4	784.4	1/2 CORE	7	946	0.015	2950	10.5	6.7	11	22	47000	2950	15	2680	6.8	1285
330195	MS8	784.4	786.2	1/2 CORE	3.6	4740	0.01	1860	3.7	1.7	7	31	34000	3180	17	1045	30.8	358
330196	MS8	786.2	788.2	1/2 CORE	0.9	217	-0.001	3080	0.7	0.6	-5	46	32000	1470	-10	156	8.1	149
330197	MS8	788.2	790.2	1/2 CORE	0.3	129	-0.001	3070	0.4	0.1	7	46	37000	1530	-10	36	1.9	100
330198	MS8	790.2	792.2	1/2 CORE	0.25	54.5	-0.001	2905	0.2	0.15	-5	46	20000	-17	-10	24	1.9	86
330199	MS8	792.2	794.2	1/2 CORE	0.2	47	0.01	3090	0.2	-0.1	-5	38	31500	1560	-10	69	1.7	73
330200	MS8	794.2	796.2	1/2 CORE	0.25	40	-0.001	3430	0.2	0.1	6.5	26	36250	1360	12	24	1.9	110
331701	MS8	796.2	798.7	1/2 CORE	0.2	35	-0.001	2760	0.3	0.1	-5	43	34000	1530	42	15	1.8	94
331770	MS9	38	40	1/2 CORE	0.05	1	0.0005	505		1	2.5	3	15500	560	5	193	1.3	216
331771	MS9	40	42	1/2 CORE	0.1	3	0.0005	700		0.9	2.5	3	15400	575	5	113	0.9	231
331772	MS9	42	44	1/2 CORE	0.2	4	0.0005	590		1	2.5	3	13700	575	5	286	1.0	349
331773	MS9	44	46	1/2 CORE	0.05	3	0.0005	650		0.5	2.5	3	12900	500	5	142	0.7	180
331774	MS9	46	48	1/2 CORE	0.2	3	0.0005	640		0.3	2.5	3	16100	650	5	136	0.7	112
331775	MS9	48	50	1/2 CORE	0.1	4	0.0005	760		1.2	2.5	6	12500	650	5	290	0.8	318
331776	MS9	50	52	1/2 CORE	0.05	2	0.0005	895		0.9	2.5	3	15900	470	5	397	0.7	235
331777	MS9	52	54	1/2 CORE	0.1	3	0.0005	690		0.9	2.5	3	16900	495	5	417	0.8	222
331778	MS9	54	56	1/2 CORE	0.1	3	0.0005	675		1.5	2.5	3	16900	490	5	385	0.8	311
331779	MS9	56	58	1/2 CORE	0.2	4	0.0005	740		1.3	2.5	3	16700	490	5	523	0.9	355
331781	MS9	58	60	1/2 CORE	0.1	12	0.002	1345		1.1	2.5	11	15700	750	5	324	1.0	282
331782	MS9	60	62	1/2 CORE	0.3	6	0.001	825		1.1	2.5	3	16900	400	5	600	2.2	281
331783	MS9	62	64	1/2 CORE	0.05	3	0.0005	935		0.5	2.5	3	18300	515	5	132	0.6	99
331784	MS9	64	66	1/2 CORE	0.2	2	0.0005	1070		1	2.5	3	16400	490	5	522	0.8	452

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SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Be_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
331785	MS9	66	68	1/2 CORE	0.1	3	0.0005	950		0.7	2.5	3	15600	525	5	268	0.6	375
331786	MS9	68	70	1/2 CORE	0.2	6.5	0.0005	770		1.2	2.5	4	14550	465	5	173	0.7	347
331787	MS9	70	72	1/2 CORE	0.2	9	0.0005	505		2.7	2.5	6	17500	480	5	321	0.8	409
331788	MS9	72	73.5	1/2 CORE	0.9	23	0.001	610		9.8	2.5	19	17800	595	5	961	1.7	1930
331789	MS9	73.5	76	1/2 CORE	1.3	52	0.003	900		3.9	13	39	42000	845	36	257	4.8	922
331790	MS9	76	78	1/2 CORE	1.2	61	0.004	895		1.7	13	40	40000	920	45	225	6.3	396
331791	MS9	78	80	1/2 CORE	0.5	35	0.002	790		0.5	14	33	32500	505	75	46	4.0	143
331792	MS9	80	82	1/2 CORE	0.5	30	0.003	785		0.3	15	31	34000	485	75	17	3.6	106
331793	MS9	82	84	1/2 CORE	0.3	25	0.003	835		0.3	14	34	32500	405	76	60	3.1	101
331794	MS9	84	86	1/2 CORE	0.3	23	0.003	840		0.3	16	39	32500	400	72	25	3.2	100
331795	MS9	86	88	1/2 CORE	0.3	22	0.002	845		0.4	15	34	31500	445	65	10	3.0	116
331796	MS9	88	90.5	1/2 CORE	0.3	24	0.002	835		0.7	15	35	33500	545	70	44	3.2	172
331797	MS9	90.5	92	1/2 CORE	0.3	21	0.001	925		0.4	14	33	31000	485	60	35	2.7	105
331798	MS9	92	94	1/2 CORE	0.3	91	0.004	915		0.4	16	38	34000	335	74	86	4.1	100
331799	MS9	94	96	1/2 CORE	0.2	26.5	0.003	925		0.5	18	44	33750	348	71	49	4.0	128
305943	MS9	96	98	1/2 CORE	0.6	25	0.003	955		0.7	15	42	34500	405	86	100	3.4	190
305944	MS9	98	100	1/2 CORE	0.5	28	0.003	985		0.7	17	59	32000	425	73	90	3.7	183
305945	MS9	100	102	1/2 CORE	0.4	27	0.003	990		0.5	19	50	33500	345	79	78	4.0	139
305946	MS9	102	104	1/2 CORE	0.5	37	0.005	1060		0.4	20	77	38500	440	70	88	4.4	121
305947	MS9	104	106	1/2 CORE	0.5	29	0.004	1070		0.5	15	43	32500	585	77	77	3.3	150
305948	MS9	106	108	1/2 CORE	0.5	23	0.003	1030		0.6	15	43	32000	440	80	91	3.0	188
305949	MS9	108	110	1/2 CORE	0.05	26	0.004	1010		0.5	17.5	60	31250	393	72	76	3.6	149
305950	MS9	110	112	1/2 CORE	0.3	23	0.002	1050		0.5	17	53	34000	380	82	64	3.2	171
305951	MS9	112	114	1/2 CORE	0.3	16	0.002	1110		0.3	19	53	34500	395	79	48	2.6	109
305952	MS9	114	116	1/2 CORE	0.2	35	0.01	1050		0.3	22	47	39000	595	69	54	3.7	100
305953	MS9	116	118	1/2 CORE	0.4	31	0.003	1020		0.3	19	69	35500	840	62	128	2.6	103
305954	MS9	118	120	1/2 CORE	0.3	36	0.004	935		0.3	21	67	38000	540	71	65	3.2	113
305955	MS9	120	122	1/2 CORE	0.3	25	0.003	1050		0.3	16	39	35500	390	76	50	3.6	104
305956	MS9	122	124	1/2 CORE	0.5	23	0.004	1010		0.4	16	42	31500	440	79	55	3.3	128
305957	MS9	124	126	1/2 CORE	0.4	28	0.004	950		0.5	15	48	31000	610	66	67	4.1	137
305958	MS9	126	128	1/2 CORE	0.6	27	0.004	975		0.7	18	56	34000	335	86	73	4.1	202
305959	MS9	128	130	1/2 CORE	0.4	35	0.003	970		0.4	17	61	34000	305	81	58	3.9	132
305961	MS9	130	132	1/2 CORE	0.5	47	0.003	950		0.3	19	53	38000	430	84	63	4.1	112
305962	MS9	132	134	1/2 CORE	0.325	35.5	0.008	940		0.3	18	50	38250	405	83	61	3.6	111
305963	MS9	134	136	1/2 CORE	0.3	54	0.003	785		0.3	23	64	55000	850	66	67	3.4	140
305964	MS9	136	138	1/2 CORE	0.2	59	0.003	900		0.2	18	38	55500	580	74	61	3.3	121
305965	MS9	138	140	1/2 CORE	0.3	60	0.002	855		0.2	19	36	55500	660	73	52	2.8	95
305966	MS9	140	142	1/2 CORE	0.2	33	0.005	1000		0.3	19	105	35000	405	77	51	2.3	105

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
305967	MS9	142	144	1/2 CORE	0.4	38	0.013	1030		0.7	24	352	38000	400	75	87	2.8	245
305968	MS9	144	146	1/2 CORE	0.05	28	0.005	1030		0.4	16	63	34500	430	77	62	2.3	131
305969	MS9	146	148	1/2 CORE	0.1	34	0.004	940		0.3	18	164	42500	425	76	62	2.5	118
305970	MS9	148	150	1/2 CORE	0.05	13	0.004	1000		0.3	19	70	32000	375	75	48	1.7	108
305971	MS9	150	152	1/2 CORE	0.05	31	0.002	837.5		0.05	22	37	58000	420	73	41	2.3	85
305972	MS9	152	154	1/2 CORE	0.05	22	0.003	1000		0.2	17	52	40500	445	84	44	2.0	82
305973	MS9	154	156	1/2 CORE	0.2	30	0.005	940		0.3	21	134	33000	265	82	78	3.1	101
305974	MS9	156	158	1/2 CORE	0.9	32	0.003	895		1.8	24	607	36000	415	75	171	3.4	508
305975	MS9	158	160	1/2 CORE	0.5	0.5	0.002	925		0.05	21	88	34000	315	84	1	0.1	123
305976	MS9	160	162	1/2 CORE	0.7	37	0.006	875		0.7	22	247	35000	390	81	137	4.2	212
305977	MS9	162	164	1/2 CORE	0.6	35	0.019	875		0.7	25	613	37000	335	77	128	4.2	226
305978	MS9	164	166	1/2 CORE	0.3	31	0.0025	840		0.5	16	122	37500	500	70	71	4.3	170
305979	MS9	166	168	1/2 CORE	0.2	33	0.007	950		0.2	19	68	40500	335	62	58	5.2	88
305981	MS9	168	170	1/2 CORE	0.05	27	0.013	830		0.2	14	88	35000	360	61	87	4.0	98
305982	MS9	170	172	1/2 CORE	0.1	19	0.009	910		0.2	16	108	33000	235	57	86	3.5	88
305983	MS9	172	174	1/2 CORE	0.05	23	0.008	775		0.4	19	73	40000	390	69	71	4.4	136
305984	MS9	174	176	1/2 CORE	0.05	28	0.009	780		0.2	16	46	42000	400	76	62	4.6	97
305985	MS9	176	178	1/2 CORE	0.05	21	0.0965	785		0.3	17	63	32000	320	72	195	4.0	93
305986	MS9	178	180	1/2 CORE	0.05	31	0.012	695		0.3	17	55	30000	495	64	63	4.3	98
274574	MS9	178.9	178.9	1/2 CORE														
305987	MS9	180	182	1/2 CORE	0.3	34	0.0135	700		0.3	22	87	34500	360	68	137	5.3	87
305988	MS9	182	184	1/2 CORE	0.2	43	0.009	675		0.2	19	48	51500	490	65	130	7.6	85
305989	MS9	184	186	1/2 CORE	0.4	24	0.007	635		0.2	16	54	35000	440	52	46	7.3	89
305990	MS9	186	188	1/2 CORE	0.3	18	0.008	635		0.2	12	72	29000	440	51	50	6.1	90
305991	MS9	188	190	1/2 CORE	0.2	30	0.005	710		0.7	16	55	31500	610	55	49	8.3	251
305992	MS9	190	192.5	1/2 CORE	0.3	40	0.0035	575		0.2	21	39	57500	455	70	43	10.4	86
305993	MS9	192.5	195	1/2 CORE	0.4	53	0.012	645		0.3	16	90	41000	405	72	54	8.8	115
305994	MS9	195	197.1	1/2 CORE	0.4	48	0.006	665		0.4	18	50	30000	425	72	49	9.6	109
305995	MS9	197.1	200	1/2 CORE	0.3	58	0.007	670		0.5	18	92	34500	395	70	63	9.2	154
305996	MS9	200	201.5	1/2 CORE	0.05	60	0.005	680		0.5	16	39	47000	355	71	73	8.8	129
305997	MS9	201.5	204	1/2 CORE	0.05	72	0.006	627.5		0.3	15	33	59000	425	64	117	8.1	86
305998	MS9	204	206	1/2 CORE	0.1	88	0.01	695		0.2	16	48	67000	435	69	151	8.2	97
305999	MS9	206	208	1/2 CORE	0.05	91	0.004	585		0.1	16	44	83000	590	69	95	7.6	80
330601	MS9	208	210	1/2 CORE	0.05	100	0.005	535		0.1	18	56	92500	760	55	78	7.4	75
330602	MS9	210	212	1/2 CORE	0.05	92	0.008	525		0.1	16	33	95000	765	54	64	6.7	74
330603	MS9	212	214	1/2 CORE	0.05	133	0.007	560		0.1	19	41	95000	665	55	73	7.5	89
330604	MS9	214	215.9	1/2 CORE	0.05	99	0.005	520		0.1	17	31	91000	760	57	79	6.6	88
330605	MS9	215.9	218	1/2 CORE	0.05	62	0.0055	805		0.3	16	49	37500	460	77	88	6.2	92

SampleID	Hole_ID	Depth_From	Depth_To	Sample_Type	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm
330606	MS9	218	220	1/2 CORE	0.05	49	0.006	775		0.2	16	63	37500	565	69	80	5.0	93
330607	MS9	220	222	1/2 CORE	0.05	52	0.006	760		0.2	17	63	37000	525	74	54	5.6	100
330608	MS9	222	224	1/2 CORE	0.05	80	0.007	745		0.9	17	67	42000	545	72	277	9.5	95
330609	MS9	224	226	1/2 CORE	0.05	65	0.008	670		0.3	15	74	38500	1090	61	143	9.6	105
330610	MS9	226	228	1/2 CORE	0.05	56.5	0.008	720		0.25	19	83	43750	725	67	69	12.4	105
330611	MS9	228	230	1/2 CORE	0.05	125	0.011	735		0.3	20	74	47000	1130	66	90	17.9	134
330612	MS9	230	232	1/2 CORE	0.2	151	0.008	745		0.6	46	82	50500	3410	80	387	23.1	276
330613	MS9	232	234	1/2 CORE	0.3	148	0.006	725		1.2	38	70	47500	2150	86	380	26.8	432
330614	MS9	234	236	1/2 CORE	0.6	122	0.006	1180		0.9	18	41	37500	3060	70	352	15.9	274
330615	MS9	236	238.2	1/2 CORE	0.9	480	0.005	1140		2.3	21	45	39000	3560	57	646	20.2	592
330616	MS9	238.2	240	1/2 CORE	0.05	217	0.002	955		1.3	2.5	11	16700	740	5	77	5.4	271
330617	MS9	240	242	1/2 CORE	0.05	35	0.002	985		0.2	2.5	3	18000	495	5	69	3.7	47
330618	MS9	242	244	1/2 CORE	0.05	16	0.001	1320		0.1	2.5	3	18900	405	5	14	3.2	26
274575	MS9	272.2	272.2	1/2 CORE														
330619	MS9	300	302	1/2 CORE	0.05	8	0.001	1150		0.05	2.5	3	17000	645	5	77	1.9	44
330621	MS9	302	304	1/2 CORE	0.05	18	0.003	1170		0.05	2.5	3	17000	555	5	31	2.0	44
330622	MS9	304	306	1/2 CORE	0.05	7	0.001	1090		0.05	2.5	3	16700	555	5	54	1.8	43
330623	MS9	306	308	1/2 CORE	0.05	6	0.0005	1050		0.2	2.5	3	15900	515	5	12	1.7	37
330624	MS9	308	310	1/2 CORE	0.05	5	0.0005	1010		0.05	2.5	3	17100	570	5	19	1.7	39
330625	MS9	310	312	1/2 CORE	0.05	5	0.0005	1010		0.05	2.5	3	17900	655	5	23	1.9	37

330656	MS10	394.6	396	1/2 core	1.7	122	0.007	1460	0.5	1.1	10	582	22000	2830	-10	137	11.6	386	330656
330657	MS10	396	398	1/2 core	1.5	55	0.004	1400	0.3	2.6	5	76	24500	2600	-10	196	14.2	832	330657
330658	MS10	398	400	1/2 core	1.7	41	0.006	1900	0.3	3.1	8	42	26000	2120	-10	277	16	1010	330658
330659	MS10	400	402	1/2 core	1.6	30	0.004	1710	0.4	6.9	-5	35	19200	1310	-10	248	9.1	1900	330659
330661	MS10	402	404	1/2 core	1.3	24	0.003	1140	0.1	2.4	-5	19	18800	3890	-10	249	8	740	330661
330662	MS10	404	405.5	1/2 core	0.9	24	-0.001	415	0.1	0.8	-5	13	11500	4160	11	90	5.6	212	330662
330663	MS10	405.5	407	1/2 core	1.4	79	0.001	610	0.4	2	-5	12	14300	3920	-10	337	9.2	559	330663
330664	MS10	407	408	1/2 core	1.2	35	0.007	1390	0.3	3.7	-5	23	16600	1970	-10	177	15.1	1540	330664
330665	MS10	408	409	1/2 core	1.5	16	0.002	1560	0.5	5.6	-5	16	12900	1450	-10	246	12.7	1905	330665
330666	MS10	409	410	1/2 core	3.1	477	0.006	2430	0.7	11.6	6	30	16500	515	10	497	20.3	3410	330666
330667	MS10	410	411	1/2 core	1.5	60	0.013	1950	0.3	7	-5	21	18400	905	-10	238	14.4	2520	330667
330668	MS10	411	412	1/2 core	1.3	18	0.008	2130	0.2	2.7	-5	21	15100	1230	-10	249	8	832	330668
330669	MS10	412	413	1/2 core	1.9	40	0.012	2160	0.7	4.7	-5	42	14200	680	11	172	12.4	1455	330669
330670	MS10	413	414	1/2 core	1.6	25	0.019	2160	0.5	4.6	-5	28	16200	1320	-10	130	11	1380	330670
330671	MS10	414	415	1/2 core	0.9	27	0.008	1290	0.2	1.3	-5	7	16100	1310	-10	126	11.6	391	330671
330672	MS10	415	416.2	1/2 core	0.7	12	0.001	1270	0.2	1	-5	7	13700	1050	-10	72	10.4	298	330672
330673	MS10	416.2	417	1/2 core	4.5	72	0.013	1230	0.9	11.4	7	71	20000	1610	26	391	17.9	3110	330673
330674	MS10	417	418	1/2 core	5.6	54	0.008	1710	1.1	13.9	6	56	27500	2310	22	434	22.8	3880	330674
330675	MS10	418	419	1/2 core	3.8	36	0.008	1600	0.7	4.5	6	23	19500	1060	19	185	16.5	1330	330675
330676	MS10	419	420	1/2 core	2.9	28	0.006	1870	0.6	6.3	5	32	24500	1690	18	172	19.5	1880	330676
330677	MS10	420	421	1/2 core	3.2	43	0.009	1970	0.8	8.2	7	44	26500	1330	20	147	19.9	2260	330677
330678	MS10	421	422.5	1/2 core	1.7	39	0.004	2160	0.6	3.8	7	24	26000	1220	20	86	14.8	1105	330678
330679	MS10	422.5	424	1/2 core	4.8	160	0.007	2050	1.8	8.9	14	57	25000	1390	33	278	26.4	2370	330679
330681	MS10	424	425.9	1/2 core	1.6	48	0.004	1540	0.6	1.8	61	30	79500	380	460	119	13.8	433	330681
330682	MS10	425.9	428	1/2 core	1.8	19	-0.001	1860	0.4	3.3	6	43	17800	1230	18	496	7.2	914	330682
330683	MS10	428	430	1/2 core	1	22	0.022	1830	0.2	1	-5	10	17400	1710	-10	278	5.7	296	330683
330684	MS10	430	432	1/2 core	1.9	15	0.013	2240	0.3	1.3	-5	10	19500	995	-10	588	6	378	330684
330685	MS10	432	434	1/2 core	1.8	13	0.001	2370	0.3	2.2	-5	6	21000	1740	-10	779	6.1	601	330685
330686	MS10	434	436.2	1/2 core	1.1	10	0.005	2020	0.4	1.4	-5	16	22000	1850	-10	391	5.6	383	330686
330687	MS10	436.2	438	1/2 core	0.5	12	-0.001	1460	0.2	0.8	-5	-5	20500	1880	-10	128	6.8	207	330687
330688	MS10	438	440	1/2 core	0.6	9	0.009	1280	0.2	0.8	-5	7	20500	1470	-10	131	6.1	210	330688
330689	MS10	440	441	1/2 core	0.6	5	0.005	1240	0.2	1.1	-5	8	19900	1720	-10	109	4.2	306	330689
330690	MS10	441	442	1/2 core	0.7	10	0.004	1190	0.2	0.7	-5	6	17600	1570	-10	149	4.2	206	330690
330691	MS10	442	444	1/2 core	0.6	7	0.006	1260	0.2	0.7	-5	6	21500	1680	-10	149	6.8	199	330691
330692	MS10	444	446	1/2 core	1.4	9	0.006	1240	0.3	2	-5	9	21500	1670	-10	295	4.9	548	330692
330693	MS10	446	448	1/2 core	1.4	12	0.004	1130	0.2	0.8	-5	20	18800	1750	-10	210	8.9	200	330693

330694	MS10	448	449	1/2 core	1	19	0.001	1220	0.1	0.7	-5	12	19300	1930	-10	106	8.1	180	330694
330695	MS10	449	450.6	1/2 core	2.7	19	-0.001	1030	0.2	3.3	-5	11	18400	1210	-10	286	7.1	723	330695
330696	MS10	450.6	451.9	1/2 core	1.4	12	0.003	880	0.2	11.8	-5	20	17000	1250	-10	138	5.9	2610	330696
330697	MS10	451.9	452.6	1/2 core	3.8	13	0.003	745	0.2	59.4	-5	23	16600	1480	-10	253	7.3	11600	330697
330698	MS10	452.6	453.6	1/2 core	1.4	5	0.001	930	0.2	4.8	-5	8	15500	2520	-10	202	3.9	967	330698
330699	MS10	453.6	455	1/2 core	2.7	16	0.002	1130	0.1	3	-5	5	15900	910	-10	1180	3.8	565	330699
331501	MS10	455	456	1/2 core	2.6	14	0.001	1160	0.1	2	-5	13	18900	2420	-10	363	5.4	378	331501
331502	MS10	456	457	1/2 core	3.5	36	0.008	955	0.2	7.3	63	13	83000	400	475	469	7.8	1055	331502
331503	MS10	457	458	1/2 core	10.4	27	0.003	955	0.2	21	-5	18	17500	2430	-10	1380	11.5	3030	331503
331504	MS10	458	459.3	1/2 core	14.3	8	0.002	970	0.2	33.4	-5	194	16100	2250	-10	1365	11.8	5260	331504
331505	MS10	459.3	460.1	1/2 core	105	12	0.003	900	0.2	439	-5	139	17200	2650	-10	21500	104.5	87500	331505
331506	MS10	460.1	461	1/2 core	10.2	6	0.005	1050	0.1	8.4	-5	74	15900	1130	-10	1375	15.1	1830	331506
331507	MS10	461	462	1/2 core	4.6	8	0.018	1140	0.2	9.1	-5	43	18800	1700	-10	693	11.6	1840	331507
331508	MS10	462	463	1/2 core	1.9	12	0.001	1140	0.2	2.4	-5	24	16700	1370	-10	312	7.6	532	331508
331509	MS10	463	464	1/2 core	1.6	7	-0.001	1010	0.2	1.6	-5	10	18700	1380	50	316	8.7	421	331509
SampleID	Hole_ID	Depth_Fro	Depth_To	Sample_Typ	Ag_ppm	As_ppm	Au_ppm	Ba_ppm	Bi_ppm	Cd_ppm	Co_ppm	Cu_ppm	Fe_ppm	Mn_ppm	Ni_ppm	Pb_ppm	Sb_ppm	Zn_ppm	SampleID
331510	MS10	464	464.9	1/2 core	1.8	21	0.004	1030	0.5	0.9	-5	12	16500	1380	27	274	10.7	353	331510
331511	MS10	464.9	466	1/2 core	1.2	16	0.007	1440	0.3	4.1	-5	21	18000	1920	10	135	11.4	1745	331511
331512	MS10	466	467	1/2 core	1.6	36	0.009	1450	0.3	1.9	-5	22	17900	1580	-10	205	10.5	879	331512
331513	MS10	467	468	1/2 core	1.1	16	0.009	1900	0.3	3.1	-5	22	23500	2390	11	132	10.2	1375	331513
331514	MS10	468	469	1/2 core	1.9	13	0.009	2290	0.3	3.9	-5	22	22000	2130	12	378	10.6	1480	331514
331515	MS10	469	470	1/2 core	0.3	8	0.007	2420	0.2	1.3	-5	13	23000	2340	-10	58	6.8	572	331515
331516	MS10	470	471	1/2 core	0.8	9	0.024	2270	0.3	2.5	-5	24	27500	3080	-10	126	7.4	1220	331516
331517	MS10	471	472	1/2 core	1.5	18	0.015	2230	0.7	4.2	-5	36	26500	2870	-10	161	11.3	2000	331517
331518	MS10	472	473	1/2 core	0.9	17	0.009	2120	0.4	1.5	-5	32	24000	2210	-10	96	12.2	689	331518
331519	MS10	473	474	1/2 core	0.7	8	0.014	3090	0.3	2.9	6	18	25500	1960	13	118	7.5	1340	331519
331521	MS10	474	475	1/2 core	0.8	16	0.014	2650	0.3	4	5	21	22000	2010	16	125	5.9	1870	331521
331522	MS10	475	476.3	1/2 core	0.7	9	0.016	2250	0.4	4.3	-5	14	24000	2250	-10	115	4.9	1915	331522
331523	MS10	476.3	477	1/2 core	0.3	17	0.016	815	0.3	5.1	-5	17	21500	2530	10	48	5.8	2200	331523
331524	MS10	477	478	1/2 core	0.7	38	0.021	1470	0.5	9	-5	24	20500	2770	-10	87	14.6	3790	331524
331525	MS10	478	479	1/2 core	0.9	13	0.016	1290	0.6	10	-5	23	15300	3100	-10	115	5.5	4630	331525
331526	MS10	479	480	1/2 core	0.7	14	0.016	1070	0.6	4.6	6	22	25000	3850	-10	98	6.2	2200	331526
331527	MS10	480	481	1/2 core	1.3	15	0.013	1510	1	4.9	-5	27	22000	5090	-10	172	9.1	2380	331527
331528	MS10	481	482	1/2 core	0.7	15	0.005	1120	0.4	1.1	-5	40	17000	3890	-10	87	9.1	584	331528
331529	MS10	482	483.6	1/2 core	1.6	12	0.02	1130	1.3	11.3	-5	19	23000	3160	-10	132	6.4	5270	331529

Na_ppm	Ca_ppm	K_ppm	Mg_ppm	Sn_ppm
595	42500	55000	3560	2.5
885	39000	45500	3590	2.2
865	28500	60000	4330	2.7
545	16600	51500	3770	2.6
330	90500	33000	4790	1.8
195	204000	17100	4540	1.2
205	164000	27500	6020	1.7
405	36500	45500	4180	3.1
400	17700	42500	3390	2.5
640	2650	62500	4140	3.6
460	8310	49000	4550	3.2
405	16200	36000	3010	2
465	6940	47500	3350	3.1
450	19600	43500	3220	2.6
365	18600	41500	4020	3.1
385	14500	45000	3880	3.3
345	21500	24500	3140	2
470	29500	43000	5260	3.2
480	12700	45000	4740	3.4
495	19600	46500	5560	3.1
515	15200	52000	5730	3.6
545	14500	56500	6680	3.7
525	17000	51500	4860	3.8
1220	5550	24500	5960	1.8
435	19200	32500	2280	2.1
530	28000	38500	3170	2.5
470	8490	45500	3560	2.4
590	22000	48500	3490	2.2
640	20000	49000	3610	2.2
525	17900	45500	3690	2.6
380	14500	40500	4020	2.4
510	21500	39500	3830	1.5
375	21000	42000	3680	1.4
370	22000	41000	3800	2.3
370	22000	40500	3860	1.9
410	21500	45000	3510	2.5

425	31000	41500	3510	2.8
410	13800	46000	3570	2.6
350	13900	42000	3400	2.3
320	18200	40500	3510	2
280	35000	34000	3010	1.5
335	10400	44000	3710	1.3
390	37500	45500	3840	1.6
1260	5760	25500	6120	2.2
370	38000	39000	3200	2.1
400	34500	38000	3380	2.5
335	49000	38000	3780	1.6
315	16900	39500	3570	2.1
290	33000	32000	3030	2.3
305	20500	36000	3340	2.5
370	21500	40000	3710	2.4
Na_ppm	Ca_ppm	K_ppm	Mg_ppm	Sn_ppm
350	19700	41500	3680	3
310	27000	37500	3830	2.7
310	17900	42500	4390	2.1
415	26000	45000	6300	2.6
410	20500	40000	5840	2.6
460	23000	51500	6770	2.1
580	32000	57500	7860	1.7
590	29000	60500	8140	2.2
560	23500	50500	6080	2.2
635	23500	51000	6320	2.1
1210	30500	46000	5570	2.1
5840	26000	55000	7070	2
10100	39000	52500	6260	1.6
8020	52000	45500	5980	2
515	114000	27500	5550	1.4
405	84500	40500	6240	1.4
935	141000	33500	6680	2.5
735	123000	29500	4850	3.4
995	53000	43500	5850	1.9

APPENDIX 5

BEATRICE PROSPECT

Magnetic Susceptibility Measurements

MS1, MS4, MS5

MS7 - MS10

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instrument	MS_Units
QUEENSTOWN	MS1	3	3	0.08	KD5	10-5
QUEENSTOWN	MS1	5.5	5.5	0.15	KD5	10-5
QUEENSTOWN	MS1	7	7	0.04	KD5	10-5
QUEENSTOWN	MS1	8.1	8.1	0.08	KD5	10-5
QUEENSTOWN	MS1	10.6	10.6	0.08	KD5	10-5
QUEENSTOWN	MS1	12	12	0.12	KD5	10-5
QUEENSTOWN	MS1	13.35	13.35	0.18	KD5	10-5
QUEENSTOWN	MS1	16.3	16.3	0.05	KD5	10-5
QUEENSTOWN	MS1	18	18	0.26	KD5	10-5
QUEENSTOWN	MS1	20.3	20.3	0.05	KD5	10-5
QUEENSTOWN	MS1	21.7	21.7	0.03	KD5	10-5
QUEENSTOWN	MS1	23.3	23.3	0.16	KD5	10-5
QUEENSTOWN	MS1	26.3	26.3	0.24	KD5	10-5
QUEENSTOWN	MS1	29.3	29.3	0.17	KD5	10-5
QUEENSTOWN	MS1	33.3	33.3	0.12	KD5	10-5
QUEENSTOWN	MS1	35.3	35.3	0.18	KD5	10-5
QUEENSTOWN	MS1	38.3	38.3	0.18	KD5	10-5
QUEENSTOWN	MS1	41.7	41.7	0.19	KD5	10-5
QUEENSTOWN	MS1	44.3	44.3	0.09	KD5	10-5
QUEENSTOWN	MS1	47.3	47.3	0.15	KD5	10-5
QUEENSTOWN	MS1	50.3	50.3	0.29	KD5	10-5
QUEENSTOWN	MS1	53.3	53.3	0.54	KD5	10-5
QUEENSTOWN	MS1	56.3	56.3	0.16	KD5	10-5
QUEENSTOWN	MS1	59.3	59.3	0.2	KD5	10-5
QUEENSTOWN	MS1	61.9	61.9	0.07	KD5	10-5
QUEENSTOWN	MS1	64.9	64.9	0.23	KD5	10-5
QUEENSTOWN	MS1	67.9	67.9	0.13	KD5	10-5
QUEENSTOWN	MS1	71.3	71.3	0.06	KD5	10-5
QUEENSTOWN	MS1	74.3	74.3	0.11	KD5	10-5
QUEENSTOWN	MS1	77.3	77.3	0.15	KD5	10-5
QUEENSTOWN	MS1	80.3	80.3	0.14	KD5	10-5
QUEENSTOWN	MS1	83.3	83.3	0.13	KD5	10-5
QUEENSTOWN	MS1	86.3	86.3	0.11	KD5	10-5
QUEENSTOWN	MS1	89.3	89.3	0.12	KD5	10-5
QUEENSTOWN	MS1	92.3	92.3	0.19	KD5	10-5
QUEENSTOWN	MS1	95.3	95.3	0.18	KD5	10-5
QUEENSTOWN	MS1	98.3	98.3	0.13	KD5	10-5
QUEENSTOWN	MS1	101.3	101.3	0.11	KD5	10-5
QUEENSTOWN	MS1	104.3	104.3	0.15	KD5	10-5
QUEENSTOWN	MS1	107.3	107.3	0.06	KD5	10-5
QUEENSTOWN	MS1	110.3	110.3	0.33	KD5	10-5
QUEENSTOWN	MS1	112.4	112.4	0.17	KD5	10-5
QUEENSTOWN	MS1	113.3	113.3	0.23	KD5	10-5
QUEENSTOWN	MS1	116.4	116.4	0.18	KD5	10-5
QUEENSTOWN	MS1	119.1	119.1	0.25	KD5	10-5
QUEENSTOWN	MS1	122.2	122.2	0.28	KD5	10-5
QUEENSTOWN	MS1	125.3	125.3	0.17	KD5	10-5
QUEENSTOWN	MS1	128.3	128.3	0.11	KD5	10-5
QUEENSTOWN	MS1	131.3	131.3	0.12	KD5	10-5
QUEENSTOWN	MS1	134.3	134.3	0.06	KD5	10-5
QUEENSTOWN	MS1	137.3	137.3	0.06	KD5	10-5
QUEENSTOWN	MS1	140.3	140.3	0.15	KD5	10-5
QUEENSTOWN	MS1	143.3	143.3	0.15	KD5	10-5
QUEENSTOWN	MS1	146.3	146.3	0.01	KD5	10-5

QUEENSTOWN	MS1	149.3	149.3	0.09	KD5	10-5
QUEENSTOWN	MS1	152.3	152.3	0.13	KD5	10-5
QUEENSTOWN	MS1	155.3	155.3	0.12	KD5	10-5
QUEENSTOWN	MS1	161.3	161.3	0.1	KD5	10-5
QUEENSTOWN	MS1	164.3	164.3	0.18	KD5	10-5
QUEENSTOWN	MS1	167.3	167.3	0.13	KD5	10-5
QUEENSTOWN	MS1	173.3	173.3	0.22	KD5	10-5
QUEENSTOWN	MS1	176.3	176.3	0.12	KD5	10-5
QUEENSTOWN	MS1	179.3	179.3	0.07	KD5	10-5
QUEENSTOWN	MS1	182.3	182.3	0.11	KD5	10-5
QUEENSTOWN	MS1	185.3	185.3	0.09	KD5	10-5
QUEENSTOWN	MS1	188.3	188.3	0.14	KD5	10-5
QUEENSTOWN	MS1	191.3	191.3	0.07	KD5	10-5
QUEENSTOWN	MS1	194.3	194.3	0.03	KD5	10-5
QUEENSTOWN	MS1	197.3	197.3	0.05	KD5	10-5
QUEENSTOWN	MS1	200.3	200.3	0.07	KD5	10-5
QUEENSTOWN	MS1	202.45	202.45	0.1	KD5	10-5
QUEENSTOWN	MS1	203.1	203.1	0.03	KD5	10-5
QUEENSTOWN	MS1	204.4	204.4	0.06	KD5	10-5
QUEENSTOWN	MS1	206.3	206.3	0.03	KD5	10-5
QUEENSTOWN	MS1	209.3	209.3	0.06	KD5	10-5
QUEENSTOWN	MS1	212.3	212.3	0.06	KD5	10-5
QUEENSTOWN	MS1	213.9	213.9	0.07	KD5	10-5
QUEENSTOWN	MS1	215.3	215.3	0.09	KD5	10-5
QUEENSTOWN	MS1	218.3	218.3	0.03	KD5	10-5
QUEENSTOWN	MS1	221.3	221.3	0.05	KD5	10-5
QUEENSTOWN	MS1	223.55	223.55	0.06	KD5	10-5
QUEENSTOWN	MS1	224.3	224.3	0.03	KD5	10-5
QUEENSTOWN	MS1	226.8	226.8	0.03	KD5	10-5
QUEENSTOWN	MS1	229.85	229.85	0.07	KD5	10-5
QUEENSTOWN	MS1	232.9	232.9	0.03	KD5	10-5
QUEENSTOWN	MS1	236.05	236.05	0.06	KD5	10-5
QUEENSTOWN	MS1	237.9	237.9	0.09	KD5	10-5
QUEENSTOWN	MS1	239.3	239.3	0.07	KD5	10-5
QUEENSTOWN	MS1	242.1	242.1	0.08	KD5	10-5
QUEENSTOWN	MS1	243.8	243.8	0.03	KD5	10-5
QUEENSTOWN	MS1	245.3	245.3	0.19	KD5	10-5
QUEENSTOWN	MS1	248.3	248.3	0.1	KD5	10-5
QUEENSTOWN	MS1	250.1	250.1	0.04	KD5	10-5
QUEENSTOWN	MS1	251.3	251.3	0.14	KD5	10-5
QUEENSTOWN	MS1	252.3	252.3	0.08	KD5	10-5
QUEENSTOWN	MS1	253.3	253.3	0.11	KD5	10-5
QUEENSTOWN	MS1	254.6	254.6	0.09	KD5	10-5
QUEENSTOWN	MS1	256	256	0.1	KD5	10-5
QUEENSTOWN	MS1	256.65	256.65	0.09	KD5	10-5
QUEENSTOWN	MS1	257.6	257.6	0.08	KD5	10-5
QUEENSTOWN	MS1	259.2	259.2	0.14	KD5	10-5
QUEENSTOWN	MS1	261	261	0.06	KD5	10-5
QUEENSTOWN	MS1	262.3	262.3	0.12	KD5	10-5
QUEENSTOWN	MS1	263.05	263.05	0.1	KD5	10-5
QUEENSTOWN	MS1	264.3	264.3	0.13	KD5	10-5
QUEENSTOWN	MS1	266.35	266.35	0.66	KD5	10-5
QUEENSTOWN	MS1	266.7	266.7	0.15	KD5	10-5
QUEENSTOWN	MS1	269.95	269.95	0.06	KD5	10-5
QUEENSTOWN	MS1	270	270	0.06	KD5	10-5

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QUEENSTOWN	MS1	272.3	272.3	0.07	KD5	10-5
QUEENSTOWN	MS1	275.3	275.3	0.07	KD5	10-5
QUEENSTOWN	MS1	278.3	278.3	0.06	KD5	10-5
QUEENSTOWN	MS1	281.3	281.3	0.07	KD5	10-5
QUEENSTOWN	MS1	284.3	284.3	0.06	KD5	10-5
QUEENSTOWN	MS1	287.3	287.3	0.1	KD5	10-5
QUEENSTOWN	MS1	290.3	290.3	0.09	KD5	10-5
QUEENSTOWN	MS1	293.3	293.3	0.08	KD5	10-5
QUEENSTOWN	MS1	296.3	296.3	0.06	KD5	10-5
QUEENSTOWN	MS1	299.3	299.3	0.08	KD5	10-5
QUEENSTOWN	MS1	302.3	302.3	0.12	KD5	10-5
QUEENSTOWN	MS1	305.3	305.3	0.07	KD5	10-5
QUEENSTOWN	MS1	308.3	308.3	0.08	KD5	10-5
QUEENSTOWN	MS1	311.3	311.3	0.07	KD5	10-5
QUEENSTOWN	MS1	314.3	314.3	0.08	KD5	10-5
QUEENSTOWN	MS1	317	317	0.05	KD5	10-5
QUEENSTOWN	MS1	320	320	0.08	KD5	10-5
QUEENSTOWN	MS1	323.7	323.7	0.1	KD5	10-5
QUEENSTOWN	MS1	326.7	326.7	0.07	KD5	10-5
QUEENSTOWN	MS1	329.1	329.1	0.11	KD5	10-5
QUEENSTOWN	MS4	10.2	10.2	0.12	KD5	10-5
QUEENSTOWN	MS4	13.8	13.8	0.14	KD5	10-5
QUEENSTOWN	MS4	16	16	0.02	KD5	10-5
QUEENSTOWN	MS4	17	17	0.05	KD5	10-5
QUEENSTOWN	MS4	19.7	19.7	0.14	KD5	10-5
QUEENSTOWN	MS4	22.8	22.8	0.21	KD5	10-5
QUEENSTOWN	MS4	29	29	0.143	KD5	10-5
QUEENSTOWN	MS4	31.25	31.25	0.19	KD5	10-5
QUEENSTOWN	MS4	33.4	33.4	0.19	KD5	10-5
QUEENSTOWN	MS4	34.9	34.9	0	KD5	10-5
QUEENSTOWN	MS4	38.2	38.2	0.05	KD5	10-5
QUEENSTOWN	MS4	40.9	40.9	0	KD5	10-5
QUEENSTOWN	MS4	43.7	43.7	0	KD5	10-5
QUEENSTOWN	MS4	46.7	46.7	0.04	KD5	10-5
QUEENSTOWN	MS4	49.1	49.1	0.06	KD5	10-5
QUEENSTOWN	MS4	50	50	0	KD5	10-5
QUEENSTOWN	MS4	53	53	0.01	KD5	10-5
QUEENSTOWN	MS4	55.7	55.7	0.07	KD5	10-5
QUEENSTOWN	MS4	59.4	59.4	0	KD5	10-5
QUEENSTOWN	MS4	60.5	60.5	0.05	KD5	10-5
QUEENSTOWN	MS4	62	62	0	KD5	10-5
QUEENSTOWN	MS4	65	65	0.14	KD5	10-5
QUEENSTOWN	MS4	66.6	66.6	0.09	KD5	10-5
QUEENSTOWN	MS4	69.25	69.25	0.1	KD5	10-5
QUEENSTOWN	MS4	71	71	0	KD5	10-5
QUEENSTOWN	MS4	74	74	0.07	KD5	10-5
QUEENSTOWN	MS4	76	76	0.1	KD5	10-5
QUEENSTOWN	MS4	79.2	79.2	0.1	KD5	10-5
QUEENSTOWN	MS4	83	83	0.13	KD5	10-5
QUEENSTOWN	MS4	86	86	0.09	KD5	10-5
QUEENSTOWN	MS4	89	89	0.11	KD5	10-5
QUEENSTOWN	MS4	92	92	0.13	KD5	10-5
QUEENSTOWN	MS4	95	95	0.01	KD5	10-5
QUEENSTOWN	MS4	98	98	0.08	KD5	10-5
QUEENSTOWN	MS4	101	101	0.07	KD5	10-5

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QUEENSTOWN	MS4	104	104	0.13	KD5	10-5
QUEENSTOWN	MS4	107	107	0.13	KD5	10-5
QUEENSTOWN	MS4	110	110	0.07	KD5	10-5
QUEENSTOWN	MS4	114	114	0.22	KD5	10-5
QUEENSTOWN	MS4	116.25	116.25	0.06	KD5	10-5
QUEENSTOWN	MS4	121.25	121.25	0.2	KD5	10-5
QUEENSTOWN	MS4	124.4	124.4	0.03	KD5	10-5
QUEENSTOWN	MS4	127.55	127.55	0.101	KD5	10-5
QUEENSTOWN	MS4	130.7	130.7	0.03	KD5	10-5
QUEENSTOWN	MS4	133.7	133.7	0.06	KD5	10-5
QUEENSTOWN	MS4	136.25	136.25	0.01	KD5	10-5
QUEENSTOWN	MS4	138.5	138.5	0	KD5	10-5
QUEENSTOWN	MS4	140.2	140.2	0.03	KD5	10-5
QUEENSTOWN	MS4	143	143	0.07	KD5	10-5
QUEENSTOWN	MS4	145.75	145.75	0.17	KD5	10-5
QUEENSTOWN	MS4	148.85	148.85	0.24	KD5	10-5
QUEENSTOWN	MS4	151.85	151.85	0.1	KD5	10-5
QUEENSTOWN	MS4	155	155	0.02	KD5	10-5
QUEENSTOWN	MS4	157.65	157.65	0.02	KD5	10-5
QUEENSTOWN	MS4	160.75	160.75	0	KD5	10-5
QUEENSTOWN	MS4	164	164	0.02	KD5	10-5
QUEENSTOWN	MS4	167.75	167.75	0.14	KD5	10-5
QUEENSTOWN	MS4	169.55	169.55	0.15	KD5	10-5
QUEENSTOWN	MS4	172.6	172.6	0.05	KD5	10-5
QUEENSTOWN	MS4	175.55	175.55	0.02	KD5	10-5
QUEENSTOWN	MS4	177.15	177.15	0.05	KD5	10-5
QUEENSTOWN	MS4	180.3	180.3	0	KD5	10-5
QUEENSTOWN	MS4	185	185	0.03	KD5	10-5
QUEENSTOWN	MS4	187.2	187.2	0.03	KD5	10-5
QUEENSTOWN	MS4	190.35	190.35	0.04	KD5	10-5
QUEENSTOWN	MS4	193.5	193.5	0.04	KD5	10-5
QUEENSTOWN	MS4	196.5	196.5	0.01	KD5	10-5
QUEENSTOWN	MS4	199.35	199.35	0.05	KD5	10-5
QUEENSTOWN	MS4	202.35	202.35	0.03	KD5	10-5
QUEENSTOWN	MS4	205.55	205.55	0.08	KD5	10-5
QUEENSTOWN	MS4	208.6	208.6	0.04	KD5	10-5
QUEENSTOWN	MS4	209.6	209.6	0.06	KD5	10-5
QUEENSTOWN	MS4	212	212	0.03	KD5	10-5
QUEENSTOWN	MS4	215	215	0.04	KD5	10-5
QUEENSTOWN	MS4	218	218	0.06	KD5	10-5
QUEENSTOWN	MS4	221	221	0.08	KD5	10-5
QUEENSTOWN	MS4	224	224	0.07	KD5	10-5
QUEENSTOWN	MS4	227	227	0.06	KD5	10-5
QUEENSTOWN	MS4	230	230	0.01	KD5	10-5
QUEENSTOWN	MS4	233	233	0.09	KD5	10-5
QUEENSTOWN	MS4	236	236	0	KD5	10-5
QUEENSTOWN	MS4	239	239	0.11	KD5	10-5
QUEENSTOWN	MS4	242	242	0.07	KD5	10-5
QUEENSTOWN	MS4	245	245	0.05	KD5	10-5
QUEENSTOWN	MS4	248	248	0.11	KD5	10-5
QUEENSTOWN	MS4	251	251	0.06	KD5	10-5
QUEENSTOWN	MS4	254	254	0.02	KD5	10-5
QUEENSTOWN	MS4	257	257	0.04	KD5	10-5
QUEENSTOWN	MS4	260	260	0.06	KD5	10-5
QUEENSTOWN	MS4	263	263	0.09	KD5	10-5

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QUEENSTOWN	MS4	266	266	0.04	KD5	10-5
QUEENSTOWN	MS4	269	269	0.09	KD5	10-5
QUEENSTOWN	MS4	271	271	0.09	KD5	10-5
QUEENSTOWN	MS4	274	274	0.06	KD5	10-5
QUEENSTOWN	MS4	277	277	0.01	KD5	10-5
QUEENSTOWN	MS4	281	281	0	KD5	10-5
QUEENSTOWN	MS4	284	284	0.09	KD5	10-5
QUEENSTOWN	MS4	287	287	0.12	KD5	10-5
QUEENSTOWN	MS4	290	290	0.06	KD5	10-5
QUEENSTOWN	MS4	293	293	0.07	KD5	10-5
QUEENSTOWN	MS4	296	296	0.06	KD5	10-5
QUEENSTOWN	MS4	299	299	0.23	KD5	10-5
QUEENSTOWN	MS4	302	302	0.06	KD5	10-5
QUEENSTOWN	MS4	305	305	0	KD5	10-5
QUEENSTOWN	MS4	308	308	0	KD5	10-5
QUEENSTOWN	MS4	311	311	0.1	KD5	10-5
QUEENSTOWN	MS4	314	314	0.07	KD5	10-5
QUEENSTOWN	MS4	317	317	0.05	KD5	10-5
QUEENSTOWN	MS4	320	320	0.06	KD5	10-5
QUEENSTOWN	MS4	323	323	0.09	KD5	10-5
QUEENSTOWN	MS4	326	326	0.08	KD5	10-5
QUEENSTOWN	MS4	329	329	0.04	KD5	10-5
QUEENSTOWN	MS4	332	332	0.07	KD5	10-5
QUEENSTOWN	MS4	335	335	0.1	KD5	10-5
QUEENSTOWN	MS4	338	338	0	KD5	10-5
QUEENSTOWN	MS4	341	341	0.07	KD5	10-5
QUEENSTOWN	MS4	344	344	0.07	KD5	10-5
QUEENSTOWN	MS4	347	347	0.1	KD5	10-5
QUEENSTOWN	MS5	7	7	0.04	KD5	10-5
QUEENSTOWN	MS5	10	10	0.06	KD5	10-5
QUEENSTOWN	MS5	12	12	0.06	KD5	10-5
QUEENSTOWN	MS5	13	13	0.04	KD5	10-5
QUEENSTOWN	MS5	16	16	0.02	KD5	10-5
QUEENSTOWN	MS5	19	19	0.03	KD5	10-5
QUEENSTOWN	MS5	22	22	0	KD5	10-5
QUEENSTOWN	MS5	25	25	0.02	KD5	10-5
QUEENSTOWN	MS5	28	28	0.05	KD5	10-5
QUEENSTOWN	MS5	31	31	0.04	KD5	10-5
QUEENSTOWN	MS5	34	34	0.05	KD5	10-5
QUEENSTOWN	MS5	37	37	0.18	KD5	10-5
QUEENSTOWN	MS5	39.7	39.7	0.15	KD5	10-5
QUEENSTOWN	MS5	40.9	40.9	0.07	KD5	10-5
QUEENSTOWN	MS5	43	43	0.09	KD5	10-5
QUEENSTOWN	MS5	46	46	0.08	KD5	10-5
QUEENSTOWN	MS5	49	49	0.07	KD5	10-5
QUEENSTOWN	MS5	55	55	0.04	KD5	10-5
QUEENSTOWN	MS5	58	58	0.06	KD5	10-5
QUEENSTOWN	MS5	60.7	60.7	0.05	KD5	10-5
QUEENSTOWN	MS5	63.8	63.8	0.05	KD5	10-5
QUEENSTOWN	MS5	66.9	66.9	0.06	KD5	10-5
QUEENSTOWN	MS5	70	70	0.04	KD5	10-5
QUEENSTOWN	MS5	73	73	0.06	KD5	10-5
QUEENSTOWN	MS5	76	76	0.06	KD5	10-5
QUEENSTOWN	MS5	79	79	0.04	KD5	10-5
QUEENSTOWN	MS5	82	82	0.05	KD5	10-5

QUEENSTOWN	MS5	85	85	0.06	KD5	10-5
QUEENSTOWN	MS5	88	88	0.06	KD5	10-5
QUEENSTOWN	MS5	91	91	0.04	KD5	10-5
QUEENSTOWN	MS5	94	94	0.06	KD5	10-5
QUEENSTOWN	MS5	97	97	0.06	KD5	10-5
QUEENSTOWN	MS5	100	100	0.03	KD5	10-5
QUEENSTOWN	MS5	103	103	0.01	KD5	10-5
QUEENSTOWN	MS5	106	106	0.06	KD5	10-5
QUEENSTOWN	MS5	109	109	0.06	KD5	10-5
QUEENSTOWN	MS5	112	112	0.06	KD5	10-5
QUEENSTOWN	MS5	115	115	0.06	KD5	10-5
QUEENSTOWN	MS5	118	118	0.09	KD5	10-5
QUEENSTOWN	MS5	121	121	0.08	KD5	10-5
QUEENSTOWN	MS5	124	124	0.1	KD5	10-5
QUEENSTOWN	MS5	129	129	0.06	KD5	10-5
QUEENSTOWN	MS5	130	130	0.06	KD5	10-5
QUEENSTOWN	MS5	132	132	0.06	KD5	10-5
QUEENSTOWN	MS5	136	136	0.05	KD5	10-5
QUEENSTOWN	MS5	139	139	0.05	KD5	10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS7	0	6	0.66	KD5	SI*10-5
QUEENSTOWN	MS7	6	8.2	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	8.2	9.7	0.01	KD5	SI*10-5
QUEENSTOWN	MS7	9.7	11.2	0.03	KD5	SI*10-5
QUEENSTOWN	MS7	11.2	12.5	0.43	KD5	SI*10-5
QUEENSTOWN	MS7	12.5	15	0.89	KD5	SI*10-5
QUEENSTOWN	MS7	15	18	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	18	20.2	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	20.2	22.9	0.29	KD5	SI*10-5
QUEENSTOWN	MS7	22.9	25	0.04	KD5	SI*10-5
QUEENSTOWN	MS7	25	26.6	0.06	KD5	SI*10-5
QUEENSTOWN	MS7	26.6	29.2	1.31	KD5	SI*10-5
QUEENSTOWN	MS7	29.2	32.2	2.11	KD5	SI*10-5
QUEENSTOWN	MS7	32.2	34.1	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	34.1	35.7	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	35.7	38.2	0.88	KD5	SI*10-5
QUEENSTOWN	MS7	38.2	41.2	1.22	KD5	SI*10-5
QUEENSTOWN	MS7	41.2	44.2	0.26	KD5	SI*10-5
QUEENSTOWN	MS7	44.2	46.6	2.17	KD5	SI*10-5
QUEENSTOWN	MS7	46.6	49.6	4.15	KD5	SI*10-5
QUEENSTOWN	MS7	49.6	52.2	0.16	KD5	SI*10-5
QUEENSTOWN	MS7	52.2	54.6	1.34	KD5	SI*10-5
QUEENSTOWN	MS7	54.6	56.2	4.12	KD5	SI*10-5
QUEENSTOWN	MS7	56.2	59.2	3.96	KD5	SI*10-5
QUEENSTOWN	MS7	59.2	62.2	4.09	KD5	SI*10-5
QUEENSTOWN	MS7	62.2	64.5	1	KD5	SI*10-5
QUEENSTOWN	MS7	64.5	66.7	1.51	KD5	SI*10-5
QUEENSTOWN	MS7	66.7	69.8	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	69.8	71.6	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	71.6	73.8	0.47	KD5	SI*10-5
QUEENSTOWN	MS7	73.8	76	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	76	78.7	3.31	KD5	SI*10-5
QUEENSTOWN	MS7	78.7	81.6	1.27	KD5	SI*10-5
QUEENSTOWN	MS7	81.6	86.2	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	86.2	89.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	89.2	92.2	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	92.2	95.2	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	95.2	98.2	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	98.2	101.1	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	101.1	104.2	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	104.2	106.6	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	106.6	109.6	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	109.6	111.8	0.16	KD5	SI*10-5
QUEENSTOWN	MS7	111.8	114.5	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	114.5	117.2	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	117.2	118.5	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	118.5	121.4	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	121.4	122	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	122	124.4	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	124.4	126.5	0.28	KD5	SI*10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS7	126.5	128.2	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	128.2	129.7	0.16	KD5	SI*10-5
QUEENSTOWN	MS7	129.7	131.8	0.19	KD5	SI*10-5
QUEENSTOWN	MS7	131.8	133.5	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	133.5	136	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	136	137	0.23	KD5	SI*10-5
QUEENSTOWN	MS7	137	138.2	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	138.2	139.2	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	139.2	140.2	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	140.2	142.4	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	142.4	143.7	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	143.7	146.2	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	146.2	147.9	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	147.9	148.9	0.2	KD5	SI*10-5
QUEENSTOWN	MS7	148.9	152.2	0.23	KD5	SI*10-5
QUEENSTOWN	MS7	152.2	153.4	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	153.4	155	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	155	156.5	0.18	KD5	SI*10-5
QUEENSTOWN	MS7	156.5	158	0.23	KD5	SI*10-5
QUEENSTOWN	MS7	158	159.7	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	159.7	161.2	0.16	KD5	SI*10-5
QUEENSTOWN	MS7	161.2	162.9	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	162.9	164.6	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	164.6	166.6	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	166.6	169.6	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	169.6	171.7	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	171.7	174.7	0.18	KD5	SI*10-5
QUEENSTOWN	MS7	174.7	176.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	176.2	178.5	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	178.5	181.7	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	181.7	183.6	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	183.6	184.6	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	184.6	187.6	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	187.6	190	0.39	KD5	SI*10-5
QUEENSTOWN	MS7	190	193.7	0.31	KD5	SI*10-5
QUEENSTOWN	MS7	193.7	196.8	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	196.8	199	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	199	200.6	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	200.6	203.2	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	203.2	204.9	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	204.9	206.9	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	206.9	209	0.16	KD5	SI*10-5
QUEENSTOWN	MS7	209	212.2	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	212.2	214.3	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	214.3	215.3	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	215.3	216.9	0.21	KD5	SI*10-5
QUEENSTOWN	MS7	216.9	219.4	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	219.4	221.2	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	221.2	224.2	0.07	KD5	SI*10-5
QUEENSTOWN	MS7	224.2	227.2	0.12	KD5	SI*10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS7	227.2	230.1	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	230.1	233	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	233	236	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	236	239.1	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	239.1	242.2	0.07	KD5	SI*10-5
QUEENSTOWN	MS7	242.2	245.2	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	245.2	248.2	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	248.2	251.2	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	251.2	254.2	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	254.2	256.6	0.24	KD5	SI*10-5
QUEENSTOWN	MS7	256.6	259.7	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	259.7	262.7	0.16	KD5	SI*10-5
QUEENSTOWN	MS7	262.7	265.7	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	265.7	268.7	0.18	KD5	SI*10-5
QUEENSTOWN	MS7	268.7	271.75	0.05	KD5	SI*10-5
QUEENSTOWN	MS7	271.75	274.8	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	274.8	277.85	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	277.85	280.9	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	280.9	283.95	0.07	KD5	SI*10-5
QUEENSTOWN	MS7	283.95	286.7	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	286.7	289.8	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	289.8	292.9	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	292.9	296	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	296	299	0.06	KD5	SI*10-5
QUEENSTOWN	MS7	299	300.6	0.06	KD5	SI*10-5
QUEENSTOWN	MS7	300.6	302.2	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	302.2	305.2	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	305.2	308.2	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	308.2	311.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	311.2	314.2	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	314.2	317.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	317.2	320.2	0.27	KD5	SI*10-5
QUEENSTOWN	MS7	320.2	323.2	0.26	KD5	SI*10-5
QUEENSTOWN	MS7	323.2	326.2	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	326.2	329.2	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	329.2	332.2	0.36	KD5	SI*10-5
QUEENSTOWN	MS7	332.2	335.2	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	335.2	338.2	0.23	KD5	SI*10-5
QUEENSTOWN	MS7	338.2	341.2	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	341.2	344.2	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	344.2	347.2	0.2	KD5	SI*10-5
QUEENSTOWN	MS7	347.2	350.2	0.21	KD5	SI*10-5
QUEENSTOWN	MS7	350.2	353.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	353.2	356.2	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	356.2	359.2	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	359.2	362.2	0.24	KD5	SI*10-5
QUEENSTOWN	MS7	362.2	365.2	0.18	KD5	SI*10-5
QUEENSTOWN	MS7	365.2	368.2	0.3	KD5	SI*10-5
QUEENSTOWN	MS7	368.2	371.2	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	371.2	374.2	0.99	KD5	SI*10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instrur	MS_Units
QUEENSTOWN	MS7	374.2	377.2	0.25	KD5	SI*10-5
QUEENSTOWN	MS7	377.2	380.2	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	380.2	383.2	0.16	KD5	SI*10-5
QUEENSTOWN	MS7	383.2	386.2	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	386.2	389.2	0.18	KD5	SI*10-5
QUEENSTOWN	MS7	389.2	392.2	0.19	KD5	SI*10-5
QUEENSTOWN	MS7	392.2	395.2	0.21	KD5	SI*10-5
QUEENSTOWN	MS7	395.2	398.2	0.29	KD5	SI*10-5
QUEENSTOWN	MS7	398.2	401.2	0.4	KD5	SI*10-5
QUEENSTOWN	MS7	401.2	404.2	1.2	KD5	SI*10-5
QUEENSTOWN	MS7	404.2	407.2	0.3	KD5	SI*10-5
QUEENSTOWN	MS7	407.2	410.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	410.2	413.2	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	413.2	416.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	416.2	419.2	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	419.2	422.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	422.2	425.2	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	425.2	428.2	0.26	KD5	SI*10-5
QUEENSTOWN	MS7	428.2	431.2	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	431.2	434.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	434.2	437.2	0.28	KD5	SI*10-5
QUEENSTOWN	MS7	437.2	440.2	0.2	KD5	SI*10-5
QUEENSTOWN	MS7	440.2	443.2	0.06	KD5	SI*10-5
QUEENSTOWN	MS7	443.2	446.2	0.11	KD5	SI*10-5
QUEENSTOWN	MS7	446.2	449.2	0.147	KD5	SI*10-5
QUEENSTOWN	MS7	449.2	452.2	0.3	KD5	SI*10-5
QUEENSTOWN	MS7	452.2	455	0.24	KD5	SI*10-5
QUEENSTOWN	MS7	455	458.1	0.06	KD5	SI*10-5
QUEENSTOWN	MS7	458.1	461.2	0.05	KD5	SI*10-5
QUEENSTOWN	MS7	461.2	464.2	0.2	KD5	SI*10-5
QUEENSTOWN	MS7	464.2	467.2	0.28	KD5	SI*10-5
QUEENSTOWN	MS7	467.2	470.2	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	470.2	473.2	0.1	KD5	SI*10-5
QUEENSTOWN	MS7	473.2	476.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	476.2	479.2	0.2	KD5	SI*10-5
QUEENSTOWN	MS7	479.2	482.2	0.35	KD5	SI*10-5
QUEENSTOWN	MS7	482.2	485.2	0.18	KD5	SI*10-5
QUEENSTOWN	MS7	485.2	488.2	0.22	KD5	SI*10-5
QUEENSTOWN	MS7	488.2	491.2	0.18	KD5	SI*10-5
QUEENSTOWN	MS7	491.2	494.2	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	494.2	497.2	16.2	KD5	SI*10-5
QUEENSTOWN	MS7	497.2	500.2	0.19	KD5	SI*10-5
QUEENSTOWN	MS7	500.2	503.2	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	503.2	506.2	0.08	KD5	SI*10-5
QUEENSTOWN	MS7	506.2	509.2	0.14	KD5	SI*10-5
QUEENSTOWN	MS7	509.2	512.2	0.13	KD5	SI*10-5
QUEENSTOWN	MS7	512.2	515.2	0.16	KD5	SI*10-5
QUEENSTOWN	MS7	515.2	518.2	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	518.2	521.2	0.15	KD5	SI*10-5
QUEENSTOWN	MS7	521.2	524.2	0.16	KD5	SI*10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instrur	MS_Units
QUEENSTOWN	MS7	524.2	527.2	0.19	KD5	SI*10-5
QUEENSTOWN	MS7	527.2	530.2	0.09	KD5	SI*10-5
QUEENSTOWN	MS7	530.2	533.2	0.23	KD5	SI*10-5
QUEENSTOWN	MS7	533.2	536.2	0.2	KD5	SI*10-5
QUEENSTOWN	MS7	536.2	539.2	0.16	KD5	SI*10-5
QUEENSTOWN	MS7	539.2	542.2	0.17	KD5	SI*10-5
QUEENSTOWN	MS7	542.2	545.2	0.12	KD5	SI*10-5
QUEENSTOWN	MS7	545.2	548.2	0.18	KD5	SI*10-5
QUEENSTOWN	MS7	548.2	550	0.12	KD5	SI*10-5
QUEENSTOWN	MS8	2.5	2.5	0.05	KD5	10-5
QUEENSTOWN	MS8	5.2	5.2	0.12	KD5	10-5
QUEENSTOWN	MS8	8.2	8.2	0.11	KD5	10-5
QUEENSTOWN	MS8	11.2	11.2	0.07	KD5	10-5
QUEENSTOWN	MS8	12.8	12.8	0.12	KD5	10-5
QUEENSTOWN	MS8	14.8	14.8	0.08	KD5	10-5
QUEENSTOWN	MS8	17.2	17.2	0.08	KD5	10-5
QUEENSTOWN	MS8	19.2	19.2	0.08	KD5	10-5
QUEENSTOWN	MS8	21.5	21.5	0.08	KD5	10-5
QUEENSTOWN	MS8	24.9	24.9	0.04	KD5	10-5
QUEENSTOWN	MS8	28	28	0.14	KD5	10-5
QUEENSTOWN	MS8	29.2	29.2	0.09	KD5	10-5
QUEENSTOWN	MS8	32.2	32.2	0.08	KD5	10-5
QUEENSTOWN	MS8	35.2	35.2	0.07	KD5	10-5
QUEENSTOWN	MS8	38.2	38.2	0.07	KD5	10-5
QUEENSTOWN	MS8	41.2	41.2	0.12	KD5	10-5
QUEENSTOWN	MS8	44.2	44.2	0.18	KD5	10-5
QUEENSTOWN	MS8	47.2	47.2	0.1	KD5	10-5
QUEENSTOWN	MS8	50.2	50.2	0.04	KD5	10-5
QUEENSTOWN	MS8	53.2	53.2	0.13	KD5	10-5
QUEENSTOWN	MS8	56.2	56.2	0.09	KD5	10-5
QUEENSTOWN	MS8	59.2	59.2	0.07	KD5	10-5
QUEENSTOWN	MS8	62.2	62.2	0.06	KD5	10-5
QUEENSTOWN	MS8	64.2	64.2	0.08	KD5	10-5
QUEENSTOWN	MS8	65.2	65.2	0.09	KD5	10-5
QUEENSTOWN	MS8	68.2	68.2	0.09	KD5	10-5
QUEENSTOWN	MS8	71.2	71.2	0.11	KD5	10-5
QUEENSTOWN	MS8	74.2	74.2	0.08	KD5	10-5
QUEENSTOWN	MS8	77.2	77.2	0.06	KD5	10-5
QUEENSTOWN	MS8	80.2	80.2	0.05	KD5	10-5
QUEENSTOWN	MS8	83.2	83.2	0.13	KD5	10-5
QUEENSTOWN	MS8	86.2	86.2	0.12	KD5	10-5
QUEENSTOWN	MS8	89.2	89.2	0.08	KD5	10-5
QUEENSTOWN	MS8	92.2	92.2	0.16	KD5	10-5
QUEENSTOWN	MS8	95.2	95.2	0.13	KD5	10-5
QUEENSTOWN	MS8	98.2	98.2	0.1	KD5	10-5
QUEENSTOWN	MS8	101	101	0.13	KD5	10-5
QUEENSTOWN	MS8	102	102	0.1	KD5	10-5
QUEENSTOWN	MS8	104.2	104.2	0.08	KD5	10-5
QUEENSTOWN	MS8	107.2	107.2	0.06	KD5	10-5
QUEENSTOWN	MS8	110.2	110.2	0.08	KD5	10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instrur	MS_Units
QUEENSTOWN	MS8	113.2	113.2	0.09	KD5	10-5
QUEENSTOWN	MS8	116.2	116.2	0.09	KD5	10-5
QUEENSTOWN	MS8	119.2	119.2	0.11	KD5	10-5
QUEENSTOWN	MS8	122.2	122.2	0.07	KD5	10-5
QUEENSTOWN	MS8	125.2	125.2	0.1	KD5	10-5
QUEENSTOWN	MS8	128.2	128.2	0.03	KD5	10-5
QUEENSTOWN	MS8	131.2	131.2	0.05	KD5	10-5
QUEENSTOWN	MS8	134.2	134.2	0.1	KD5	10-5
QUEENSTOWN	MS8	137.2	137.2	0.1	KD5	10-5
QUEENSTOWN	MS8	140.2	140.2	0.05	KD5	10-5
QUEENSTOWN	MS8	143.2	143.2	0.08	KD5	10-5
QUEENSTOWN	MS8	146.2	146.2	0.05	KD5	10-5
QUEENSTOWN	MS8	149.2	149.2	0.1	KD5	10-5
QUEENSTOWN	MS8	152.2	152.2	0.08	KD5	10-5
QUEENSTOWN	MS8	155.2	155.2	0.11	KD5	10-5
QUEENSTOWN	MS8	158.2	158.2	0.08	KD5	10-5
QUEENSTOWN	MS8	161.2	161.2	0.12	KD5	10-5
QUEENSTOWN	MS8	164.2	164.2	0.03	KD5	10-5
QUEENSTOWN	MS8	167.2	167.2	0.06	KD5	10-5
QUEENSTOWN	MS8	170.2	170.2	0.04	KD5	10-5
QUEENSTOWN	MS8	173.2	173.2	0.08	KD5	10-5
QUEENSTOWN	MS8	176.2	176.2	0.07	KD5	10-5
QUEENSTOWN	MS8	179.2	179.2	0.1	KD5	10-5
QUEENSTOWN	MS8	182.2	182.2	0.08	KD5	10-5
QUEENSTOWN	MS8	185.2	185.2	0.05	KD5	10-5
QUEENSTOWN	MS8	188.2	188.2	0.03	KD5	10-5
QUEENSTOWN	MS8	191.2	191.2	0.08	KD5	10-5
QUEENSTOWN	MS8	193.8	193.8	0.04	KD5	10-5
QUEENSTOWN	MS8	196.9	196.9	0.04	KD5	10-5
QUEENSTOWN	MS8	200	200	0.06	KD5	10-5
QUEENSTOWN	MS8	203.1	203.1	0.04	KD5	10-5
QUEENSTOWN	MS8	206.2	206.2	0.07	KD5	10-5
QUEENSTOWN	MS8	209.2	209.2	0.07	KD5	10-5
QUEENSTOWN	MS8	212.2	212.2	0.1	KD5	10-5
QUEENSTOWN	MS8	215.2	215.2	0.06	KD5	10-5
QUEENSTOWN	MS8	218.2	218.2	0.11	KD5	10-5
QUEENSTOWN	MS8	221.1	221.1	0.03	KD5	10-5
QUEENSTOWN	MS8	224.2	224.2	0.09	KD5	10-5
QUEENSTOWN	MS8	227.2	227.2	0.02	KD5	10-5
QUEENSTOWN	MS8	230.2	230.2	0.04	KD5	10-5
QUEENSTOWN	MS8	233.2	233.2	0.09	KD5	10-5
QUEENSTOWN	MS8	236.2	236.2	0.07	KD5	10-5
QUEENSTOWN	MS8	239.2	239.2	0.04	KD5	10-5
QUEENSTOWN	MS8	242.2	242.2	0.09	KD5	10-5
QUEENSTOWN	MS8	245.2	245.2	0.09	KD5	10-5
QUEENSTOWN	MS8	248.2	248.2	0.06	KD5	10-5
QUEENSTOWN	MS8	251.2	251.2	0.08	KD5	10-5
QUEENSTOWN	MS8	254.2	254.2	0.09	KD5	10-5
QUEENSTOWN	MS8	257.2	257.2	0.11	KD5	10-5
QUEENSTOWN	MS8	260.2	260.2	0.1	KD5	10-5

645356

DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS8	263.2	263.2	0.09	KD5	10-5
QUEENSTOWN	MS8	266.2	266.2	0.15	KD5	10-5
QUEENSTOWN	MS8	269.2	269.2	0.11	KD5	10-5
QUEENSTOWN	MS8	272.2	272.2	0.12	KD5	10-5
QUEENSTOWN	MS8	275.2	275.2	0.08	KD5	10-5
QUEENSTOWN	MS8	278.2	278.2	0.14	KD5	10-5
QUEENSTOWN	MS8	281.2	281.2	0.07	KD5	10-5
QUEENSTOWN	MS8	284.2	284.2	0.13	KD5	10-5
QUEENSTOWN	MS8	287.2	287.2	0.1	KD5	10-5
QUEENSTOWN	MS8	290.2	290.2	0.09	KD5	10-5
QUEENSTOWN	MS8	293.2	293.2	0.1	KD5	10-5
QUEENSTOWN	MS8	296.2	296.2	0.09	KD5	10-5
QUEENSTOWN	MS8	298.5	298.5	0.13	KD5	10-5
QUEENSTOWN	MS8	300.1	300.1	0.06	KD5	10-5
QUEENSTOWN	MS8	302.2	302.2	0.08	KD5	10-5
QUEENSTOWN	MS8	305.2	305.2	0.12	KD5	10-5
QUEENSTOWN	MS8	307	307	0.11	KD5	10-5
QUEENSTOWN	MS8	308.2	308.2	0.12	KD5	10-5
QUEENSTOWN	MS8	311.2	311.2	0.12	KD5	10-5
QUEENSTOWN	MS8	314.2	314.2	0.11	KD5	10-5
QUEENSTOWN	MS8	317.2	317.2	0.1	KD5	10-5
QUEENSTOWN	MS8	320.2	320.2	0.05	KD5	10-5
QUEENSTOWN	MS8	322.5	322.5	0.1	KD5	10-5
QUEENSTOWN	MS8	323	323	0.1	KD5	10-5
QUEENSTOWN	MS8	325	325	0.11	KD5	10-5
QUEENSTOWN	MS8	326.2	326.2	0.12	KD5	10-5
QUEENSTOWN	MS8	329.2	329.2	0.04	KD5	10-5
QUEENSTOWN	MS8	332.2	332.2	0.11	KD5	10-5
QUEENSTOWN	MS8	335.2	335.2	0.07	KD5	10-5
QUEENSTOWN	MS8	337	337	0.09	KD5	10-5
QUEENSTOWN	MS8	338.2	338.2	0.16	KD5	10-5
QUEENSTOWN	MS8	341.2	341.2	0.06	KD5	10-5
QUEENSTOWN	MS8	344.2	344.2	0.11	KD5	10-5
QUEENSTOWN	MS8	347.2	347.2	0.11	KD5	10-5
QUEENSTOWN	MS8	350.2	350.2	0.14	KD5	10-5
QUEENSTOWN	MS8	353.2	353.2	0.13	KD5	10-5
QUEENSTOWN	MS8	355.4	355.4	0.14	KD5	10-5
QUEENSTOWN	MS8	357	357	0.1	KD5	10-5
QUEENSTOWN	MS8	359.2	359.2	0.05	KD5	10-5
QUEENSTOWN	MS8	361.2	361.2	0.07	KD5	10-5
QUEENSTOWN	MS8	362.2	362.2	0.13	KD5	10-5
QUEENSTOWN	MS8	364.7	364.7	0.05	KD5	10-5
QUEENSTOWN	MS8	367.8	367.8	0.21	KD5	10-5
QUEENSTOWN	MS8	369.6	369.6	0.11	KD5	10-5
QUEENSTOWN	MS8	370.6	370.6	0.14	KD5	10-5
QUEENSTOWN	MS8	372.9	372.9	0.08	KD5	10-5
QUEENSTOWN	MS8	374.2	374.2	0.03	KD5	10-5
QUEENSTOWN	MS8	377.2	377.2	0.09	KD5	10-5
QUEENSTOWN	MS8	379.8	379.8	0.05	KD5	10-5
QUEENSTOWN	MS8	382.9	382.9	0.1	KD5	10-5

64535?

DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS8	385	385	0.06	KD5	10-5
QUEENSTOWN	MS8	386.2	386.2	0.08	KD5	10-5
QUEENSTOWN	MS8	389.2	389.2	0.08	KD5	10-5
QUEENSTOWN	MS8	392.2	392.2	0.11	KD5	10-5
QUEENSTOWN	MS8	394.2	394.2	0.1	KD5	10-5
QUEENSTOWN	MS8	395.2	395.2	0	KD5	10-5
QUEENSTOWN	MS8	398.2	398.2	0.15	KD5	10-5
QUEENSTOWN	MS8	400.4	400.4	0.09	KD5	10-5
QUEENSTOWN	MS8	403.4	403.4	0.11	KD5	10-5
QUEENSTOWN	MS8	406.5	406.5	0.05	KD5	10-5
QUEENSTOWN	MS8	409.6	409.6	0.17	KD5	10-5
QUEENSTOWN	MS8	411.7	411.7	0.16	KD5	10-5
QUEENSTOWN	MS8	413.2	413.2	0.04	KD5	10-5
QUEENSTOWN	MS8	416.2	416.2	0.08	KD5	10-5
QUEENSTOWN	MS8	419.2	419.2	0.1	KD5	10-5
QUEENSTOWN	MS8	422.2	422.2	0.13	KD5	10-5
QUEENSTOWN	MS8	424.6	424.6	0.11	KD5	10-5
QUEENSTOWN	MS8	425.3	425.3	0.13	KD5	10-5
QUEENSTOWN	MS8	428.2	428.2	0.13	KD5	10-5
QUEENSTOWN	MS8	431.2	431.2	0.23	KD5	10-5
QUEENSTOWN	MS8	433	433	0.05	KD5	10-5
QUEENSTOWN	MS8	436.1	436.1	0.15	KD5	10-5
QUEENSTOWN	MS8	439.2	439.2	0.14	KD5	10-5
QUEENSTOWN	MS8	442.3	442.3	0.15	KD5	10-5
QUEENSTOWN	MS8	445.4	445.4	0.13	KD5	10-5
QUEENSTOWN	MS8	447.5	447.5	0.13	KD5	10-5
QUEENSTOWN	MS8	449.2	449.2	0.16	KD5	10-5
QUEENSTOWN	MS8	451	451	0.13	KD5	10-5
QUEENSTOWN	MS8	452.2	452.2	0.1	KD5	10-5
QUEENSTOWN	MS8	455.2	455.2	0.11	KD5	10-5
QUEENSTOWN	MS8	457.2	457.2	0.11	KD5	10-5
QUEENSTOWN	MS8	458.2	458.2	0.14	KD5	10-5
QUEENSTOWN	MS8	461	461	0.12	KD5	10-5
QUEENSTOWN	MS8	462.4	462.4	0.23	KD5	10-5
QUEENSTOWN	MS8	463.4	463.4	0.17	KD5	10-5
QUEENSTOWN	MS8	464.6	464.6	0.13	KD5	10-5
QUEENSTOWN	MS8	467.2	467.2	0.17	KD5	10-5
QUEENSTOWN	MS8	469.2	469.2	0.07	KD5	10-5
QUEENSTOWN	MS8	470.6	470.6	0.18	KD5	10-5
QUEENSTOWN	MS8	472.6	472.6	0.19	KD5	10-5
QUEENSTOWN	MS8	474.5	474.5	0.14	KD5	10-5
QUEENSTOWN	MS8	477.2	477.2	0.02	KD5	10-5
QUEENSTOWN	MS8	478.8	478.8	0.12	KD5	10-5
QUEENSTOWN	MS8	479.6	479.6	0.07	KD5	10-5
QUEENSTOWN	MS8	481.4	481.4	0.07	KD5	10-5
QUEENSTOWN	MS8	482.9	482.9	0.1	KD5	10-5
QUEENSTOWN	MS8	485.2	485.2	0.13	KD5	10-5
QUEENSTOWN	MS8	487.2	487.2	0.19	KD5	10-5
QUEENSTOWN	MS8	488.6	488.6	0.08	KD5	10-5
QUEENSTOWN	MS8	491.2	491.2	0.18	KD5	10-5

645358

DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instrur	MS_Units
QUEENSTOWN	MS8	494.2	494.2	0.19	KD5	10-5
QUEENSTOWN	MS8	496.9	496.9	0.22	KD5	10-5
QUEENSTOWN	MS8	497.3	497.3	0	KD5	10-5
QUEENSTOWN	MS8	498.7	498.7	0.38	KD5	10-5
QUEENSTOWN	MS8	500	500	0.19	KD5	10-5
QUEENSTOWN	MS8	502.1	502.1	0.12	KD5	10-5
QUEENSTOWN	MS8	505.2	505.2	0.1	KD5	10-5
QUEENSTOWN	MS8	508.3	508.3	0.11	KD5	10-5
QUEENSTOWN	MS8	511.4	511.4	0.15	KD5	10-5
QUEENSTOWN	MS8	513.8	513.8	0.18	KD5	10-5
QUEENSTOWN	MS8	515.2	515.2	0.16	KD5	10-5
QUEENSTOWN	MS8	517	517	0.12	KD5	10-5
QUEENSTOWN	MS8	520	520	0.17	KD5	10-5
QUEENSTOWN	MS8	522.8	522.8	0.1	KD5	10-5
QUEENSTOWN	MS8	525.9	525.9	0.08	KD5	10-5
QUEENSTOWN	MS8	529	529	0.13	KD5	10-5
QUEENSTOWN	MS8	530.2	530.2	0.11	KD5	10-5
QUEENSTOWN	MS8	533.2	533.2	0.1	KD5	10-5
QUEENSTOWN	MS8	536.2	536.2	0.13	KD5	10-5
QUEENSTOWN	MS8	539.2	539.2	0.1	KD5	10-5
QUEENSTOWN	MS8	542.2	542.2	0.13	KD5	10-5
QUEENSTOWN	MS8	545.2	545.2	0.1	KD5	10-5
QUEENSTOWN	MS8	548.2	548.2	0.11	KD5	10-5
QUEENSTOWN	MS8	551.2	551.2	0.15	KD5	10-5
QUEENSTOWN	MS8	554.2	554.2	0.09	KD5	10-5
QUEENSTOWN	MS8	557.2	557.2	0.13	KD5	10-5
QUEENSTOWN	MS8	560.2	560.2	0.13	KD5	10-5
QUEENSTOWN	MS8	563.2	563.2	0.44	KD5	10-5
QUEENSTOWN	MS8	565.4	565.4	2.22	KD5	10-5
QUEENSTOWN	MS8	568.5	568.5	0.13	KD5	10-5
QUEENSTOWN	MS8	571.6	571.6	0.17	KD5	10-5
QUEENSTOWN	MS8	574.7	574.7	0.28	KD5	10-5
QUEENSTOWN	MS8	577.8	577.8	0.3	KD5	10-5
QUEENSTOWN	MS8	580.8	580.8	0.13	KD5	10-5
QUEENSTOWN	MS8	583.8	583.8	0.05	KD5	10-5
QUEENSTOWN	MS8	586.8	586.8	0.05	KD5	10-5
QUEENSTOWN	MS8	589.6	589.6	0.06	KD5	10-5
QUEENSTOWN	MS8	592.7	592.7	0.11	KD5	10-5
QUEENSTOWN	MS8	595.7	595.7	0.1	KD5	10-5
QUEENSTOWN	MS8	598.8	598.8	0.14	KD5	10-5
QUEENSTOWN	MS8	601.8	601.8	0.1	KD5	10-5
QUEENSTOWN	MS8	604.9	604.9	0.15	KD5	10-5
QUEENSTOWN	MS8	608	608	0.13	KD5	10-5
QUEENSTOWN	MS8	611.1	611.1	0.12	KD5	10-5
QUEENSTOWN	MS8	614.2	614.2	0.15	KD5	10-5
QUEENSTOWN	MS8	617.2	617.2	0.15	KD5	10-5
QUEENSTOWN	MS8	620.2	620.2	0.21	KD5	10-5
QUEENSTOWN	MS8	623.2	623.2	0.12	KD5	10-5
QUEENSTOWN	MS8	626.2	626.2	0.12	KD5	10-5
QUEENSTOWN	MS8	629.2	629.2	0.08	KD5	10-5

645359

DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS8	632	632	0.14	KD5	10-5
QUEENSTOWN	MS8	635	635	0.15	KD5	10-5
QUEENSTOWN	MS8	638.1	638.1	0.12	KD5	10-5
QUEENSTOWN	MS8	641.2	641.2	0.16	KD5	10-5
QUEENSTOWN	MS8	644.2	644.2	0.15	KD5	10-5
QUEENSTOWN	MS8	647.2	647.2	0.19	KD5	10-5
QUEENSTOWN	MS8	650.2	650.2	0.11	KD5	10-5
QUEENSTOWN	MS8	653.2	653.2	0.2	KD5	10-5
QUEENSTOWN	MS8	656.2	656.2	0.16	KD5	10-5
QUEENSTOWN	MS8	659.2	659.2	0.14	KD5	10-5
QUEENSTOWN	MS8	662.5	662.5	0.1	KD5	10-5
QUEENSTOWN	MS8	665.2	665.2	0.09	KD5	10-5
QUEENSTOWN	MS8	668.2	668.2	0.14	KD5	10-5
QUEENSTOWN	MS8	670.8	670.8	0.32	KD5	10-5
QUEENSTOWN	MS8	673.9	673.9	0.47	KD5	10-5
QUEENSTOWN	MS8	677	677	0.12	KD5	10-5
QUEENSTOWN	MS8	680	680	0.19	KD5	10-5
QUEENSTOWN	MS8	683.1	683.1	0.17	KD5	10-5
QUEENSTOWN	MS8	686	686	0.16	KD5	10-5
QUEENSTOWN	MS8	689.1	689.1	0.11	KD5	10-5
QUEENSTOWN	MS8	691.2	691.2	0.1	KD5	10-5
QUEENSTOWN	MS8	694.3	694.3	0.15	KD5	10-5
QUEENSTOWN	MS8	697.4	697.4	0.14	KD5	10-5
QUEENSTOWN	MS8	700.4	700.4	0.15	KD5	10-5
QUEENSTOWN	MS8	701.8	701.8	0.21	KD5	10-5
QUEENSTOWN	MS8	704.2	704.2	0.12	KD5	10-5
QUEENSTOWN	MS8	707.2	707.2	0.11	KD5	10-5
QUEENSTOWN	MS8	710.2	710.2	0.1	KD5	10-5
QUEENSTOWN	MS8	713.2	713.2	0.04	KD5	10-5
QUEENSTOWN	MS8	716.2	716.2	0.32	KD5	10-5
QUEENSTOWN	MS8	719	719	0.27	KD5	10-5
QUEENSTOWN	MS8	722	722	0.19	KD5	10-5
QUEENSTOWN	MS8	725.1	725.1	0.14	KD5	10-5
QUEENSTOWN	MS8	728.2	728.2	0.12	KD5	10-5
QUEENSTOWN	MS8	731.2	731.2	0.11	KD5	10-5
QUEENSTOWN	MS8	734.2	734.2	0.11	KD5	10-5
QUEENSTOWN	MS8	737.2	737.2	0.15	KD5	10-5
QUEENSTOWN	MS8	740.2	740.2	0.1	KD5	10-5
QUEENSTOWN	MS8	743.2	743.2	0.11	KD5	10-5
QUEENSTOWN	MS8	746.2	746.2	0.1	KD5	10-5
QUEENSTOWN	MS8	749.2	749.2	0.1	KD5	10-5
QUEENSTOWN	MS8	752.2	752.2	0.08	KD5	10-5
QUEENSTOWN	MS8	755.2	755.2	0.06	KD5	10-5
QUEENSTOWN	MS8	758.2	758.2	0.11	KD5	10-5
QUEENSTOWN	MS8	761.2	761.2	0.14	KD5	10-5
QUEENSTOWN	MS8	764.2	764.2	0.12	KD5	10-5
QUEENSTOWN	MS8	767.2	767.2	0.11	KD5	10-5
QUEENSTOWN	MS8	770.2	770.2	0.07	KD5	10-5
QUEENSTOWN	MS8	773.2	773.2	0.11	KD5	10-5
QUEENSTOWN	MS8	776.2	776.2	0.15	KD5	10-5

645360

DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS8	779.2	779.2	0.42	KD5	10-5
QUEENSTOWN	MS8	782.2	782.2	0.2	KD5	10-5
QUEENSTOWN	MS8	785.2	785.2	0.1	KD5	10-5
QUEENSTOWN	MS8	788.2	788.2	0.31	KD5	10-5
QUEENSTOWN	MS8	791.2	791.2	0.17	KD5	10-5
QUEENSTOWN	MS8	794.2	794.2	0.23	KD5	10-5
QUEENSTOWN	MS8	797.2	797.2	0.62	KD5	10-5
QUEENSTOWN	MS8	798.7	798.7	0.43	KD5	10-5
QUEENSTOWN	MS9	4.7	4.7	0.08	KD5	10-5
QUEENSTOWN	MS9	5.2	5.2	0.07	KD5	10-5
QUEENSTOWN	MS9	7.3	7.3	0.04	KD5	10-5
QUEENSTOWN	MS9	8.2	8.2	0.09	KD5	10-5
QUEENSTOWN	MS9	11.2	11.2	0.06	KD5	10-5
QUEENSTOWN	MS9	14.2	14.2	0.1	KD5	10-5
QUEENSTOWN	MS9	17.2	17.2	0.09	KD5	10-5
QUEENSTOWN	MS9	20.2	20.2	0.08	KD5	10-5
QUEENSTOWN	MS9	23.2	23.2	0.09	KD5	10-5
QUEENSTOWN	MS9	26.2	26.2	0.09	KD5	10-5
QUEENSTOWN	MS9	28.2	28.2	0.06	KD5	10-5
QUEENSTOWN	MS9	29.2	29.2	0.05	KD5	10-5
QUEENSTOWN	MS9	30.3	30.3	0.07	KD5	10-5
QUEENSTOWN	MS9	31.8	31.8	0.07	KD5	10-5
QUEENSTOWN	MS9	33.3	33.3	0.07	KD5	10-5
QUEENSTOWN	MS9	35.2	35.2	0.09	KD5	10-5
QUEENSTOWN	MS9	41	41	0.06	KD5	10-5
QUEENSTOWN	MS9	43.7	43.7	0.06	KD5	10-5
QUEENSTOWN	MS9	47	47	0.11	KD5	10-5
QUEENSTOWN	MS9	50.1	50.1	0.11	KD5	10-5
QUEENSTOWN	MS9	53.2	53.2	0.09	KD5	10-5
QUEENSTOWN	MS9	56.2	56.2	0.08	KD5	10-5
QUEENSTOWN	MS9	59.2	59.2	0.08	KD5	10-5
QUEENSTOWN	MS9	62.2	62.2	0.09	KD5	10-5
QUEENSTOWN	MS9	65.2	65.2	0.06	KD5	10-5
QUEENSTOWN	MS9	68.2	68.2	0.07	KD5	10-5
QUEENSTOWN	MS9	71.2	71.2	0.08	KD5	10-5
QUEENSTOWN	MS9	74.2	74.2	0.11	KD5	10-5
QUEENSTOWN	MS9	77.1	77.1	0.08	KD5	10-5
QUEENSTOWN	MS9	80.2	80.2	0.1	KD5	10-5
QUEENSTOWN	MS9	82.8	82.8	0.09	KD5	10-5
QUEENSTOWN	MS9	85.2	85.2	0.08	KD5	10-5
QUEENSTOWN	MS9	91.8	91.8	0.09	KD5	10-5
QUEENSTOWN	MS9	92.7	92.7	0.06	KD5	10-5
QUEENSTOWN	MS9	93.5	93.5	0.07	KD5	10-5
QUEENSTOWN	MS9	94.3	94.3	0.08	KD5	10-5
QUEENSTOWN	MS9	94.9	94.9	0.08	KD5	10-5
QUEENSTOWN	MS9	96.6	96.6	0.11	KD5	10-5
QUEENSTOWN	MS9	98.2	98.2	0.09	KD5	10-5
QUEENSTOWN	MS9	100.6	100.6	0.1	KD5	10-5
QUEENSTOWN	MS9	101.2	101.2	0.08	KD5	10-5
QUEENSTOWN	MS9	101.6	101.6	0.1	KD5	10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS9	102.5	102.5	0.04	KD5	10-5
QUEENSTOWN	MS9	103.8	103.8	0.08	KD5	10-5
QUEENSTOWN	MS9	106.9	106.9	0.1	KD5	10-5
QUEENSTOWN	MS9	108.3	108.3	0.07	KD5	10-5
QUEENSTOWN	MS9	109.8	109.8	0.09	KD5	10-5
QUEENSTOWN	MS9	112.9	112.9	0.1	KD5	10-5
QUEENSTOWN	MS9	116	116	0.1	KD5	10-5
QUEENSTOWN	MS9	119.1	119.1	0.1	KD5	10-5
QUEENSTOWN	MS9	120.5	120.5	0.09	KD5	10-5
QUEENSTOWN	MS9	121.8	121.8	0.08	KD5	10-5
QUEENSTOWN	MS9	124.8	124.8	0.1	KD5	10-5
QUEENSTOWN	MS9	126.6	126.6	0.11	KD5	10-5
QUEENSTOWN	MS9	128.2	128.2	0.07	KD5	10-5
QUEENSTOWN	MS9	129.9	129.9	0.14	KD5	10-5
QUEENSTOWN	MS9	131.2	131.2	0.07	KD5	10-5
QUEENSTOWN	MS9	133.2	133.2	0.09	KD5	10-5
QUEENSTOWN	MS9	134.2	134.2	0.15	KD5	10-5
QUEENSTOWN	MS9	135.5	135.5	0.18	KD5	10-5
QUEENSTOWN	MS9	137.2	137.2	0.19	KD5	10-5
QUEENSTOWN	MS9	139.8	139.8	0.12	KD5	10-5
QUEENSTOWN	MS9	142.9	142.9	0.15	KD5	10-5
QUEENSTOWN	MS9	145	145	0.1	KD5	10-5
QUEENSTOWN	MS9	146.2	146.2	0.11	KD5	10-5
QUEENSTOWN	MS9	147.5	147.5	0.12	KD5	10-5
QUEENSTOWN	MS9	148.6	148.6	0.12	KD5	10-5
QUEENSTOWN	MS9	149.4	149.4	0.13	KD5	10-5
QUEENSTOWN	MS9	152.2	152.2	0.1	KD5	10-5
QUEENSTOWN	MS9	153.4	153.4	0.08	KD5	10-5
QUEENSTOWN	MS9	154.1	154.1	0.1	KD5	10-5
QUEENSTOWN	MS9	155	155	0.07	KD5	10-5
QUEENSTOWN	MS9	155.8	155.8	0.12	KD5	10-5
QUEENSTOWN	MS9	152.1	152.1	0.11	KD5	10-5
QUEENSTOWN	MS9	157.7	157.7	0.08	KD5	10-5
QUEENSTOWN	MS9	158.8	158.8	0.06	KD5	10-5
QUEENSTOWN	MS9	160	160	0.11	KD5	10-5
QUEENSTOWN	MS9	161	161	0.05	KD5	10-5
QUEENSTOWN	MS9	162.3	162.3	0.1	KD5	10-5
QUEENSTOWN	MS9	163	163	0.06	KD5	10-5
QUEENSTOWN	MS9	164.2	164.2	0.22	KD5	10-5
QUEENSTOWN	MS9	166.1	166.1	0.15	KD5	10-5
QUEENSTOWN	MS9	167.2	167.2	0.08	KD5	10-5
QUEENSTOWN	MS9	170	170	0.09	KD5	10-5
QUEENSTOWN	MS9	170.9	170.9	0.03	KD5	10-5
QUEENSTOWN	MS9	171.6	171.6	0.16	KD5	10-5
QUEENSTOWN	MS9	173.4	173.4	0.11	KD5	10-5
QUEENSTOWN	MS9	173	173	0.09	KD5	10-5
QUEENSTOWN	MS9	174.7	174.7	0.14	KD5	10-5
QUEENSTOWN	MS9	176.2	176.2	0.08	KD5	10-5
QUEENSTOWN	MS9	177.7	177.7	0.08	KD5	10-5
QUEENSTOWN	MS9	179.2	179.2	0.09	KD5	10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS9	180.2	180.2	0.09	KD5	10-5
QUEENSTOWN	MS9	180.7	180.7	0.08	KD5	10-5
QUEENSTOWN	MS9	181.8	181.8	0.09	KD5	10-5
QUEENSTOWN	MS9	184.7	184.7	0.1	KD5	10-5
QUEENSTOWN	MS9	186.1	186.1	0.1	KD5	10-5
QUEENSTOWN	MS9	187.8	187.8	0.11	KD5	10-5
QUEENSTOWN	MS9	188.9	188.9	0.11	KD5	10-5
QUEENSTOWN	MS9	190.2	190.2	0.23	KD5	10-5
QUEENSTOWN	MS9	191.2	191.2	0.26	KD5	10-5
QUEENSTOWN	MS9	192.8	192.8	0.17	KD5	10-5
QUEENSTOWN	MS9	193.9	193.9	0.09	KD5	10-5
QUEENSTOWN	MS9	194.8	194.8	0.1	KD5	10-5
QUEENSTOWN	MS9	195.8	195.8	0.08	KD5	10-5
QUEENSTOWN	MS9	196.9	196.9	0.05	KD5	10-5
QUEENSTOWN	MS9	197.8	197.8	0.06	KD5	10-5
QUEENSTOWN	MS9	199.8	199.8	0.12	KD5	10-5
QUEENSTOWN	MS9	200.8	200.8	0.18	KD5	10-5
QUEENSTOWN	MS9	203.1	203.1	0.22	KD5	10-5
QUEENSTOWN	MS9	205.7	205.7	0.25	KD5	10-5
QUEENSTOWN	MS9	206.7	206.7	0.31	KD5	10-5
QUEENSTOWN	MS9	208.2	208.2	0.28	KD5	10-5
QUEENSTOWN	MS9	209.2	209.2	0.24	KD5	10-5
QUEENSTOWN	MS9	211.3	211.3	0.3	KD5	10-5
QUEENSTOWN	MS9	212.2	212.2	0.21	KD5	10-5
QUEENSTOWN	MS9	214	214	0.25	KD5	10-5
QUEENSTOWN	MS9	215.2	215.2	0.31	KD5	10-5
QUEENSTOWN	MS9	217.2	217.2	0.09	KD5	10-5
QUEENSTOWN	MS9	118.2	118.2	0.1	KD5	10-5
QUEENSTOWN	MS9	218.2	218.2	0.09	KD5	10-5
QUEENSTOWN	MS9	220.2	220.2	0.08	KD5	10-5
QUEENSTOWN	MS9	221.2	221.2	0.07	KD5	10-5
QUEENSTOWN	MS9	222.1	222.1	0.09	KD5	10-5
QUEENSTOWN	MS9	222.9	222.9	0.08	KD5	10-5
QUEENSTOWN	MS9	224.2	224.2	0.07	KD5	10-5
QUEENSTOWN	MS9	226.1	226.1	0.14	KD5	10-5
QUEENSTOWN	MS9	227.2	227.2	0.07	KD5	10-5
QUEENSTOWN	MS9	230	230	0.12	KD5	10-5
QUEENSTOWN	MS9	233.1	233.1	0.06	KD5	10-5
QUEENSTOWN	MS9	235.2	235.2	0.11	KD5	10-5
QUEENSTOWN	MS9	236.2	236.2	0.14	KD5	10-5
QUEENSTOWN	MS9	237.8	237.8	0.1	KD5	10-5
QUEENSTOWN	MS9	242.2	242.2	0.06	KD5	10-5
QUEENSTOWN	MS9	245.2	245.2	0.08	KD5	10-5
QUEENSTOWN	MS9	248.2	248.2	0.06	KD5	10-5
QUEENSTOWN	MS9	251.2	251.2	0.07	KD5	10-5
QUEENSTOWN	MS9	254.2	254.2	0.03	KD5	10-5
QUEENSTOWN	MS9	257.2	257.2	0.12	KD5	10-5
QUEENSTOWN	MS9	260.2	260.2	0.11	KD5	10-5
QUEENSTOWN	MS9	263	263	0.07	KD5	10-5
QUEENSTOWN	MS9	266.1	266.1	0.08	KD5	10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instrur	MS_Units
QUEENSTOWN	MS9	269.2	269.2	0.06	KD5	10-5
QUEENSTOWN	MS9	272.2	272.2	0.1	KD5	10-5
QUEENSTOWN	MS9	275.2	275.2	0.1	KD5	10-5
QUEENSTOWN	MS9	277.3	277.3	0.04	KD5	10-5
QUEENSTOWN	MS9	278.8	278.8	0.09	KD5	10-5
QUEENSTOWN	MS9	281.2	281.2	0.13	KD5	10-5
QUEENSTOWN	MS9	284.2	284.2	0.08	KD5	10-5
QUEENSTOWN	MS9	286.2	286.2	0.13	KD5	10-5
QUEENSTOWN	MS9	289.3	289.3	0.1	KD5	10-5
QUEENSTOWN	MS9	292.4	292.4	0.13	KD5	10-5
QUEENSTOWN	MS9	295.2	295.2	0.11	KD5	10-5
QUEENSTOWN	MS9	296.9	296.9	0.1	KD5	10-5
QUEENSTOWN	MS9	299.2	299.2	2.67	KD5	10-5
QUEENSTOWN	MS9	302.2	302.2	1.98	KD5	10-5
QUEENSTOWN	MS9	305.2	305.2	2.45	KD5	10-5
QUEENSTOWN	MS9	308.2	308.2	3.32	KD5	10-5
QUEENSTOWN	MS9	311.2	311.2	4.13	KD5	10-5
QUEENSTOWN	MS9	314.2	314.2	1.92	KD5	10-5
QUEENSTOWN	MS9	317.2	317.2	2.51	KD5	10-5
QUEENSTOWN	MS9	320.2	320.2	5.33	KD5	10-5
QUEENSTOWN	MS9	323.2	323.2	3.54	KD5	10-5
QUEENSTOWN	MS9	326.2	326.2	4.06	KD5	10-5
QUEENSTOWN	MS9	328.9	328.9	1.62	KD5	10-5
QUEENSTOWN	MS9	332	332	4.28	KD5	10-5
QUEENSTOWN	MS9	335.1	335.1	3.4	KD5	10-5
QUEENSTOWN	MS9	338.2	338.2	3.12	KD5	10-5
QUEENSTOWN	MS9	340.2	340.2	3.51	KD5	10-5
QUEENSTOWN	MS9	346.4	346.4	1.68	KD5	10-5
QUEENSTOWN	MS9	348.8	348.8	0.16	KD5	10-5
QUEENSTOWN	MS9	350.9	350.9	0.91	KD5	10-5
QUEENSTOWN	MS9	353.2	353.2	1.32	KD5	10-5
QUEENSTOWN	MS9	356.2	356.2	0.21	KD5	10-5
QUEENSTOWN	MS9	359.2	359.2	2.7	KD5	10-5
QUEENSTOWN	MS9	362.2	362.2	4.56	KD5	10-5
QUEENSTOWN	MS9	365.2	365.2	3.08	KD5	10-5
QUEENSTOWN	MS9	368.2	368.2	2.14	KD5	10-5
QUEENSTOWN	MS9	371.2	371.2	1.88	KD5	10-5
QUEENSTOWN	MS9	374.2	374.2	0.79	KD5	10-5
QUEENSTOWN	MS9	377.2	377.2	4.32	KD5	10-5
QUEENSTOWN	MS9	380.2	380.2	0.28	KD5	10-5
QUEENSTOWN	MS9	382.1	382.1	1.88	KD5	10-5
QUEENSTOWN	MS9	385	385	2.24	KD5	10-5
QUEENSTOWN	MS9	387.5	387.5	2.54	KD5	10-5
QUEENSTOWN	MS10	0	6.5	0.01	KD5	10-5
QUEENSTOWN	MS10	6.5	7.3	0.23	KD5	10-5
QUEENSTOWN	MS10	7.3	8	0	KD5	10-5
QUEENSTOWN	MS10	8	9.55	0.13	KD5	10-5
QUEENSTOWN	MS10	9.55	11	0.18	KD5	10-5
QUEENSTOWN	MS10	11	14.1	0.35	KD5	10-5
QUEENSTOWN	MS10	14.1	16	0.05	KD5	10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS10	16	18.6	0.19	KD5	10-5
QUEENSTOWN	MS10	18.6	20.4	0.15	KD5	10-5
QUEENSTOWN	MS10	20.4	21.6	0.06	KD5	10-5
QUEENSTOWN	MS10	21.6	24.7	0.09	KD5	10-5
QUEENSTOWN	MS10	24.7	27.7	0.16	KD5	10-5
QUEENSTOWN	MS10	27.7	30.7	0.07	KD5	10-5
QUEENSTOWN	MS10	30.7	33.7	0.08	KD5	10-5
QUEENSTOWN	MS10	33.7	36.9	0.06	KD5	10-5
QUEENSTOWN	MS10	36.9	40	0.13	KD5	10-5
QUEENSTOWN	MS10	40	43.1	0.04	KD5	10-5
QUEENSTOWN	MS10	43.1	46.1	0.1	KD5	10-5
QUEENSTOWN	MS10	46.1	48.3	0.11	KD5	10-5
QUEENSTOWN	MS10	48.3	50.4	0.09	KD5	10-5
QUEENSTOWN	MS10	50.4	53.4	0.02	KD5	10-5
QUEENSTOWN	MS10	53.4	56.1	0.11	KD5	10-5
QUEENSTOWN	MS10	56.1	59.3	0.25	KD5	10-5
QUEENSTOWN	MS10	59.3	62.4	0.14	KD5	10-5
QUEENSTOWN	MS10	62.4	65.4	0	KD5	10-5
QUEENSTOWN	MS10	65.4	68.4	0.29	KD5	10-5
QUEENSTOWN	MS10	68.4	71.4	0	KD5	10-5
QUEENSTOWN	MS10	71.4	73.2	0.2	KD5	10-5
QUEENSTOWN	MS10	73.2	74.4	0.23	KD5	10-5
QUEENSTOWN	MS10	74.4	76.1	0.08	KD5	10-5
QUEENSTOWN	MS10	76.1	77.4	0.42	KD5	10-5
QUEENSTOWN	MS10	77.4	80.4	0.14	KD5	10-5
QUEENSTOWN	MS10	80.4	81.4	0.25	KD5	10-5
QUEENSTOWN	MS10	81.4	82.5	0.15	KD5	10-5
QUEENSTOWN	MS10	82.5	83.9	0.11	KD5	10-5
QUEENSTOWN	MS10	83.9	86.4	0.61	KD5	10-5
QUEENSTOWN	MS10	86.4	89.4	0.23	KD5	10-5
QUEENSTOWN	MS10	89.4	91.3	0.42	KD5	10-5
QUEENSTOWN	MS10	91.3	93.5	0.38	KD5	10-5
QUEENSTOWN	MS10	93.5	94.3	0.73	KD5	10-5
QUEENSTOWN	MS10	94.3	95.8	0.33	KD5	10-5
QUEENSTOWN	MS10	95.8	96.5	0.25	KD5	10-5
QUEENSTOWN	MS10	96.5	98.5	0.22	KD5	10-5
QUEENSTOWN	MS10	98.5	99.6	0.04	KD5	10-5
QUEENSTOWN	MS10	99.6	101.2	0.29	KD5	10-5
QUEENSTOWN	MS10	101.2	103.3	0.11	KD5	10-5
QUEENSTOWN	MS10	103.3	104.1	0.06	KD5	10-5
QUEENSTOWN	MS10	104.1	105.5	0.07	KD5	10-5
QUEENSTOWN	MS10	105.5	106.1	0.04	KD5	10-5
QUEENSTOWN	MS10	106.1	108.5	0	KD5	10-5
QUEENSTOWN	MS10	108.5	109.1	0	KD5	10-5
QUEENSTOWN	MS10	109.1	110	0.22	KD5	10-5
QUEENSTOWN	MS10	110	110.7	0.15	KD5	10-5
QUEENSTOWN	MS10	110.7	111.3	0	KD5	10-5
QUEENSTOWN	MS10	111.3	112.1	0.04	KD5	10-5
QUEENSTOWN	MS10	112.1	113.9	0.08	KD5	10-5
QUEENSTOWN	MS10	113.9	116.1	0.36	KD5	10-5

QUEENSTOWN	MS10	116.1	118.5	0.03	KD5	10-5
QUEENSTOWN	MS10	118.5	121.2	0.54	KD5	10-5
QUEENSTOWN	MS10	121.2	123.9	0.12	KD5	10-5
QUEENSTOWN	MS10	123.9	126.5	0.35	KD5	10-5
QUEENSTOWN	MS10	126.5	128.5	0.42	KD5	10-5
QUEENSTOWN	MS10	128.5	130.2	0.52	KD5	10-5
QUEENSTOWN	MS10	130.2	131.3	0.37	KD5	10-5
QUEENSTOWN	MS10	131.3	132.9	0.33	KD5	10-5
QUEENSTOWN	MS10	132.9	134.9	0.1	KD5	10-5
QUEENSTOWN	MS10	134.9	137.3	0.08	KD5	10-5
QUEENSTOWN	MS10	137.3	139.9	0.08	KD5	10-5
QUEENSTOWN	MS10	139.9	142.3	0.02	KD5	10-5
QUEENSTOWN	MS10	142.3	144.6	0.08	KD5	10-5
QUEENSTOWN	MS10	144.6	147.5	0.14	KD5	10-5
QUEENSTOWN	MS10	147.5	150.6	0.13	KD5	10-5
QUEENSTOWN	MS10	150.6	152.4	0.11	KD5	10-5
QUEENSTOWN	MS10	152.4	155.3	0.07	KD5	10-5
QUEENSTOWN	MS10	155.3	175.5	0.09	KD5	10-5
QUEENSTOWN	MS10	175.5	160.4	0	KD5	10-5
QUEENSTOWN	MS10	160.4	163.5	0.09	KD5	10-5
QUEENSTOWN	MS10	163.5	166.6	0.04	KD5	10-5
QUEENSTOWN	MS10	166.6	169	0.1	KD5	10-5
QUEENSTOWN	MS10	169	171.9	0.16	KD5	10-5
QUEENSTOWN	MS10	171.9	174.4	0.34	KD5	10-5
QUEENSTOWN	MS10	174.4	176.1	0.47	KD5	10-5
QUEENSTOWN	MS10	176.1	177.6	0.17	KD5	10-5
QUEENSTOWN	MS10	177.6	180.6	0.14	KD5	10-5
QUEENSTOWN	MS10	180.6	182.4	0.22	KD5	10-5
QUEENSTOWN	MS10	182.4	185.4	0.39	KD5	10-5
QUEENSTOWN	MS10	185.4	188.4	0.01	KD5	10-5
QUEENSTOWN	MS10	188.4	191.4	0	KD5	10-5
QUEENSTOWN	MS10	191.4	193.9	0.08	KD5	10-5
QUEENSTOWN	MS10	193.9	197	0.02	KD5	10-5
QUEENSTOWN	MS10	197	199	0.01	KD5	10-5
QUEENSTOWN	MS10	199	200.4	0.07	KD5	10-5
QUEENSTOWN	MS10	200.4	202.1	0.07	KD5	10-5
QUEENSTOWN	MS10	202.1	204.3	0.08	KD5	10-5
QUEENSTOWN	MS10	204.3	206.9	0	KD5	10-5
QUEENSTOWN	MS10	206.9	208.1	0.13	KD5	10-5
QUEENSTOWN	MS10	208.1	210.7	0.03	KD5	10-5
QUEENSTOWN	MS10	210.7	212.4	0.08	KD5	10-5
QUEENSTOWN	MS10	212.4	214.5	0.17	KD5	10-5
QUEENSTOWN	MS10	214.5	217	0.06	KD5	10-5
QUEENSTOWN	MS10	217	220	0.06	KD5	10-5
QUEENSTOWN	MS10	220	223.1	0.14	KD5	10-5
QUEENSTOWN	MS10	223.1	226.2	0.09	KD5	10-5
QUEENSTOWN	MS10	226.2	229.2	0.12	KD5	10-5
QUEENSTOWN	MS10	229.2	232.2	0.05	KD5	10-5
QUEENSTOWN	MS10	232.2	235.2	0.06	KD5	10-5
QUEENSTOWN	MS10	235.2	238.2	0.12	KD5	10-5

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DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS10	238.2	241.2	0.04	KD5	10-5
QUEENSTOWN	MS10	241.2	244.2	0.08	KD5	10-5
QUEENSTOWN	MS10	244.2	247.2	0.13	KD5	10-5
QUEENSTOWN	MS10	247.2	250.2	0.09	KD5	10-5
QUEENSTOWN	MS10	250.2	253.2	0.06	KD5	10-5
QUEENSTOWN	MS10	253.2	256.2	0	KD5	10-5
QUEENSTOWN	MS10	256.2	259.2	0.07	KD5	10-5
QUEENSTOWN	MS10	259.2	262.2	0	KD5	10-5
QUEENSTOWN	MS10	262.2	265.1	0.03	KD5	10-5
QUEENSTOWN	MS10	265.1	268.2	0	KD5	10-5
QUEENSTOWN	MS10	268.2	271.2	0.06	KD5	10-5
QUEENSTOWN	MS10	271.2	274.2	0.13	KD5	10-5
QUEENSTOWN	MS10	274.2	277.2	0.12	KD5	10-5
QUEENSTOWN	MS10	277.2	280.2	0.09	KD5	10-5
QUEENSTOWN	MS10	280.2	283.2	0.11	KD5	10-5
QUEENSTOWN	MS10	283.2	286.2	0	KD5	10-5
QUEENSTOWN	MS10	286.2	289.2	0.08	KD5	10-5
QUEENSTOWN	MS10	289.2	292.2	0.02	KD5	10-5
QUEENSTOWN	MS10	292.2	295.2	0.07	KD5	10-5
QUEENSTOWN	MS10	295.2	298.4	0.04	KD5	10-5
QUEENSTOWN	MS10	298.4	301.2	0.02	KD5	10-5
QUEENSTOWN	MS10	301.2	304.2	0.06	KD5	10-5
QUEENSTOWN	MS10	304.2	307.2	0.07	KD5	10-5
QUEENSTOWN	MS10	307.2	310.2	0.1	KD5	10-5
QUEENSTOWN	MS10	310.2	313.2	0.08	KD5	10-5
QUEENSTOWN	MS10	313.2	314.4	0.19	KD5	10-5
QUEENSTOWN	MS10	314.4	317.4	0.07	KD5	10-5
QUEENSTOWN	MS10	317.4	320.4	0.08	KD5	10-5
QUEENSTOWN	MS10	320.4	323.4	0.07	KD5	10-5
QUEENSTOWN	MS10	323.4	326.4	0.2	KD5	10-5
QUEENSTOWN	MS10	326.4	329.4	0	KD5	10-5
QUEENSTOWN	MS10	329.4	332.4	0	KD5	10-5
QUEENSTOWN	MS10	332.4	338.4	0.17	KD5	10-5
QUEENSTOWN	MS10	338.4	341.4	0.72	KD5	10-5
QUEENSTOWN	MS10	341.4	344	2.68	KD5	10-5
QUEENSTOWN	MS10	344	347.1	1.34	KD5	10-5
QUEENSTOWN	MS10	347.1	348.2	0.04	KD5	10-5
QUEENSTOWN	MS10	348.2	350.4	0.62	KD5	10-5
QUEENSTOWN	MS10	350.4	353.4	2.26	KD5	10-5
QUEENSTOWN	MS10	353.4	356.4	2.27	KD5	10-5
QUEENSTOWN	MS10	356.4	359.4	2	KD5	10-5
QUEENSTOWN	MS10	359.4	362.4	3.86	KD5	10-5
QUEENSTOWN	MS10	362.4	365.4	2.2	KD5	10-5
QUEENSTOWN	MS10	365.4	368.4	2.3	KD5	10-5
QUEENSTOWN	MS10	368.4	371.4	1.23	KD5	10-5
QUEENSTOWN	MS10	371.4	374.4	0.1	KD5	10-5
QUEENSTOWN	MS10	374.4	377.4	0.84	KD5	10-5
QUEENSTOWN	MS10	377.4	380.4	0.8	KD5	10-5
QUEENSTOWN	MS10	380.4	383.4	0.06	KD5	10-5
QUEENSTOWN	MS10	383.4	386.4	0.09	KD5	10-5

645366

645367

DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instrur	MS_Units
QUEENSTOWN	MS10	386.4	389.4	0.09	KD5	10-5
QUEENSTOWN	MS10	389.4	392.4	0.1	KD5	10-5
QUEENSTOWN	MS10	392.4	395.4	0.19	KD5	10-5
QUEENSTOWN	MS10	395.4	398.4	0.45	KD5	10-5
QUEENSTOWN	MS10	398.4	401.4	0.05	KD5	10-5
QUEENSTOWN	MS10	401.4	404.4	0.05	KD5	10-5
QUEENSTOWN	MS10	404.4	407.4	0.09	KD5	10-5
QUEENSTOWN	MS10	407.4	410.4	0.03	KD5	10-5
QUEENSTOWN	MS10	410.4	413.1	0.01	KD5	10-5
QUEENSTOWN	MS10	413.1	416.2	0.02	KD5	10-5
QUEENSTOWN	MS10	416.2	419.3	0.28	KD5	10-5
QUEENSTOWN	MS10	419.3	422.4	0.37	KD5	10-5
QUEENSTOWN	MS10	422.4	425.4	0.09	KD5	10-5
QUEENSTOWN	MS10	425.4	428.4	0.07	KD5	10-5
QUEENSTOWN	MS10	428.4	431.4	0.06	KD5	10-5
QUEENSTOWN	MS10	431.4	434.4	0.11	KD5	10-5
QUEENSTOWN	MS10	434.4	437.4	0.12	KD5	10-5
QUEENSTOWN	MS10	437.4	440.4	0.09	KD5	10-5
QUEENSTOWN	MS10	440.4	443.4	0.07	KD5	10-5
QUEENSTOWN	MS10	443.4	446.4	0.09	KD5	10-5
QUEENSTOWN	MS10	446.4	449.4	0.01	KD5	10-5
QUEENSTOWN	MS10	449.4	452.4	0.04	KD5	10-5
QUEENSTOWN	MS10	452.4	455.4	0.09	KD5	10-5
QUEENSTOWN	MS10	455.4	458.4	0.06	KD5	10-5
QUEENSTOWN	MS10	458.4	461.4	0.06	KD5	10-5
QUEENSTOWN	MS10	461.4	464.4	0.17	KD5	10-5
QUEENSTOWN	MS10	464.4	467.4	0.21	KD5	10-5
QUEENSTOWN	MS10	467.4	470.4	0.12	KD5	10-5
QUEENSTOWN	MS10	470.4	473.4	0.15	KD5	10-5
QUEENSTOWN	MS10	473.4	476.4	0.12	KD5	10-5
QUEENSTOWN	MS10	476.4	479.4	0.1	KD5	10-5
QUEENSTOWN	MS10	479.4	482.4	0.16	KD5	10-5
QUEENSTOWN	MS10	482.4	485.4	0.06	KD5	10-5
QUEENSTOWN	MS10	485.4	488.4	0.1	KD5	10-5
QUEENSTOWN	MS10	488.4	491.4	0	KD5	10-5
QUEENSTOWN	MS10	491.4	494.4	0.19	KD5	10-5
QUEENSTOWN	MS10	494.4	497.1	0	KD5	10-5
QUEENSTOWN	MS10	497.1	500.2	0.16	KD5	10-5
QUEENSTOWN	MS10	500.2	503.4	0.02	KD5	10-5
QUEENSTOWN	MS10	503.4	506.4	0.06	KD5	10-5
QUEENSTOWN	MS10	506.4	509.4	0.1	KD5	10-5
QUEENSTOWN	MS10	509.4	512.4	0.13	KD5	10-5
QUEENSTOWN	MS10	512.4	515.4	0.26	KD5	10-5
QUEENSTOWN	MS10	515.4	518.4	0.05	KD5	10-5
QUEENSTOWN	MS10	518.4	521.4	0	KD5	10-5
QUEENSTOWN	MS10	521.4	524.4	0.04	KD5	10-5
QUEENSTOWN	MS10	524.4	527.4	0.03	KD5	10-5
QUEENSTOWN	MS10	527.4	530.4	0.14	KD5	10-5
QUEENSTOWN	MS10	530.4	533.4	0.01	KD5	10-5
QUEENSTOWN	MS10	533.4	536.4	0.14	KD5	10-5

645368

DataSet	Hole_ID	Depth_Fro	Depth_To	Mag_Sus	MS_Instru	MS_Units
QUEENSTOWN	MS10	536.4	539.4	0	KD5	10-5
QUEENSTOWN	MS10	539.4	542.4	0.06	KD5	10-5
QUEENSTOWN	MS10	542.4	545.4	0.01	KD5	10-5
QUEENSTOWN	MS10	545.4	548.4	0.51	KD5	10-5
QUEENSTOWN	MS10	548.4	551.4	0.38	KD5	10-5
QUEENSTOWN	MS10	551.4	554.4	0.3	KD5	10-5
QUEENSTOWN	MS10	554.4	557.4	0.09	KD5	10-5
QUEENSTOWN	MS10	557.4	560.4	0.13	KD5	10-5
QUEENSTOWN	MS10	560.4	563.4	0.84	KD5	10-5
QUEENSTOWN	MS10	563.4	566.4	0.72	KD5	10-5
QUEENSTOWN	MS10	566.4	569.4	0.03	KD5	10-5
QUEENSTOWN	MS10	569.4	572.4	0.23	KD5	10-5
QUEENSTOWN	MS10	572.4	575.4	0.67	KD5	10-5
QUEENSTOWN	MS10	575.4	578.4	0.18	KD5	10-5
QUEENSTOWN	MS10	578.4	581.4	0.31	KD5	10-5
QUEENSTOWN	MS10	581.4	584.4	0.03	KD5	10-5
QUEENSTOWN	MS10	584.4	587.4	0.01	KD5	10-5
QUEENSTOWN	MS10	587.4	590.4	0.48	KD5	10-5
QUEENSTOWN	MS10	590.4	593.4	0.03	KD5	10-5
QUEENSTOWN	MS10	593.4	596.4	1.91	KD5	10-5
QUEENSTOWN	MS10	596.4	599.4	0.05	KD5	10-5
QUEENSTOWN	MS10	599.4	602.4	1.94	KD5	10-5
QUEENSTOWN	MS10	602.4	605.4	0.02	KD5	10-5
QUEENSTOWN	MS10	605.4	608.4	0.2	KD5	10-5
QUEENSTOWN	MS10	608.4	611.4	0.39	KD5	10-5
QUEENSTOWN	MS10	611.4	614.4	0.47	KD5	10-5
QUEENSTOWN	MS10	614.4	617.4	1.1	KD5	10-5
QUEENSTOWN	MS10	617.4	620.4	1.46	KD5	10-5
QUEENSTOWN	MS10	620.4	623.4	0.23	KD5	10-5
QUEENSTOWN	MS10	623.4	626.4	0.06	KD5	10-5
QUEENSTOWN	MS10	626.4	629.4	0.77	KD5	10-5
QUEENSTOWN	MS10	629.4	632.4	0	KD5	10-5
QUEENSTOWN	MS10	632.4	635.4	0.06	KD5	10-5
QUEENSTOWN	MS10	635.4	638.4	0.14	KD5	10-5
QUEENSTOWN	MS10	638.4	641.4	0.08	KD5	10-5
QUEENSTOWN	MS10	641.4	646.4	0.14	KD5	10-5
QUEENSTOWN	MS10	646.4	647.4	0.08	KD5	10-5
QUEENSTOWN	MS10	647.4	650.4	0.17	KD5	10-5
QUEENSTOWN	MS10	650.4	653.4	0.23	KD5	10-5
QUEENSTOWN	MS10	653.4	656.4	0.06	KD5	10-5

APPENDIX 6

BEATRICE PROSPECT

Modelling and Interpretation of Induced

Polarisation data from the Beatrice Prospect,

March 1999, C. Dauth.

PASMINCO EXPLORATION

MODELLING AND INTERPRETATION OF INDUCED POLARISATION DATA FROM THE BEATRICE PROSPECT FEBRUARY - MARCH 1999

EL 6/98

Author: Chris Dauth

Date: April 1999

Submitted To: B Murphy

Copies To: Pasminco Exploration, Melbourne

Submitted By:

Accepted By:

Melbourne Report No: VC 247

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1. SUMMARY

During February-March 1999, a total of 8.8 line kilometres of induced polarisation (IP) data using the pole-dipole configuration were acquired at the Beatrice Prospect. The Beatrice Prospect is situated in Western Tasmania within EL 6/98 approximately 7 kilometres north of the town of Queenstown. Data were acquired by Zonge Engineering Pty Ltd under instruction by Pasminco Exploration who are currently exploring the ground for Rosebery style Pb-Zn-Ag-Au mineralisation The aim of the IP survey was to delineate anomalous chargeability and resistivity response that could be attributed to disseminated sulphide alteration and/or direct massive sulphide mineralisation for the purpose of drill target generation.

The pole-dipole configuration was selected to enable suitable depth penetration to facilitate mapping several hundred metres below the surface through a resistive quartz-porphyry unit. The technique allowed relative ease of field acquisition and provided a high signal strength to enable reading eight dipole receiver stations (n=8). A consequence of the large number of receiver stations was relatively slow production. A total of 30.73 days were required to acquire 8.8 line kilometres, equating to 0.3 km's per day (six dipole movements) and costing approximately $AUS7000/km. In future it has been recommended that alternative field procedures are developed to assist with data acquisition.

The survey data were of good quality with high signal to noise ratios encountered for all dipole separations. It is anticipated that larger n spacings (at least out to n=12) would have been theoretically possible, effectively increasing the depth of investigation. Data were inverted using the Zonge IP2D smooth model inversion software and output as depth-sections of depth v's resistivity and depth v's chargeability.

The local geology is relatively well represented in the IP inversion results. Black shale units typically exhibit chargeable and moderately conductive responses in contrast to the siliclastics and porphyry which exhibit resistive and low chargeability response. There are several zones whereby alteration is inferred through deviation of the above expected electrical characteristics of lithological units. Moderately high chargeability and lower resistivity within the porphyry and siliclastics are interpreted to respond to alteration (most likely caused by disseminated pyrite). These are interpreted to exist within an anticlinal fold in the north-east (Line 1800N and 2000N) and in the south-east (Line 800N, 1000N and 1200N) at depth within a porphyry. Several other smaller isolated zones of alteration have been delineated and are defined on interpreted sections within the report.

Recommendations include drill testing of three zones of anomalous chargeability. A target on Line 2000N is situated within favourable geology in the anticlinal hinge below a folded black shale. The second target on Line 800N lies within a porphyry unit and is coincident with anomalous mobile metal ion geochemical results. A third target is defined on Line 1200N just to the west of the Itac Creek Fault position.

2. INTRODUCTION

The Beatrice Prospect is situated within EL6/98 approximately 7 km's north of the town of Queenstown in Western Tasmania (Figure 1.). The ground is currently being explored by Pasminco Exploration for its potential to host Rosebery style Zn-Pb-Ag-Au mineralisation within Palaeozoic volcanics and volcaniclastic sediments of the Central Mt Read Volcanics. The region also has potential for Mt Lyell style Cu-Au mineralisation.

This report presents results of a pole-dipole configuration induced polarisation (IP) survey conducted by Zonge Engineering Pty Ltd (Zonge) for Pasminco Exploration during February-March 1999. The aim of the IP survey was to delineate anomalous chargeability and resistivity response that would be directly associated with sulphide mineralisation, and thus provide targets for further exploratory drilling.

3. LOCAL GEOLOGY AND PREVIOUS WORK

The Beatrice Prospect comprises a prospective horizon of the Cambrian Mt Read Volcanics at the top of the Central Volcanic Complex (CVC). The CVC comprises predominantly felsic volcanics and volcaniclastics and is typically overlain by a sequence of shales, siltstones and sandstones. It is conceptual that this contact provides a focus for mineralisation either by acting as a fluid trap and favourable geochemical site via the overlying shales, or as the sea-floor position for Koroko style VHMS mineralisation deposited during a period of quiescence. A quartz-feldspar porphyry has intruded possibly as a sill along this contact and is a prominent feature of the local geology (the Mt Sedgewick Porphyry). The Ordovician Owen Conglomerate forms topographic ridges and scree slopes that abut onto the prospective ground. Remnants of eroded Permian sediments as horizontal layered clay/silt/sand beds are also evident in the region.

The simplified local geology comprises a gently folded to steeply dipping north-south striking black shale horizon situated at the contact between overlying porphyry and underlying volcaniclastic and felsic volcanic units. The black shale outcrops along a fault expressed along a present day drainage (Itac Creek) and is interpreted to dip steeply to the west and then gently fold to form an anticline in the west underlying the Mt Sedgewick Porphyry. Minor Pb-Zn mineralisation is observed in outcrop and in drill intersections within the black shale and underlying siliclastics. The two areas with potential for further mineralisation are considered to be the steeply dipping shale in the Itac Creek and the extensions of this shale (and ashes-shales-ignimbrites) that underlie the Mt Sedgewick Porphyry to the West and East of Itac Creek.

Exploration to date has focused upon the black shale units that are situated strike parallel with the Itac Creek Fault.

Previous work has been summarised by Denwer (1998) in an unpublished report for Pasminco Exploration. Initial work at the prospect commenced in 1975 with stream sediment sampling and geological mapping. Subsequent work included:

- Establishment of over 40 km's of gridding - 1976-present
- 38 line km's of gradient array IP surveying - 1976
- Additional soil sampling - 1977-78
- Drilling MS1, MS2, and MS3 - 1978
- EIP, DHIP, dipole-dipole, and pole-dipole IP geophysical surveys (SCINTREX) - 1978
- Drilling MS4, and MS5 - 1979
- Ground magnetics, gradient array IP, pole-dipole IP, dipole-dipole IP - 1979
- Fixed loop UTEM - 1989
- Drilling MS06 - 1996

4. SURVEY SPECIFICATIONS

The pole-dipole survey configuration was selected primarily to facilitate measurement of receiver potentials out to at least n=8 (400m) from the transmitter electrode position. The potential voltages measured a distance from an electrode position supplying a current to the earth vary dependent on the array configuration. Dipole-dipole array IP surveying (more generally applied in exploration) has a voltage that drops off more rapidly with distance from the electrode than for the pole-dipole array (Figure 2), hence the pole-dipole technique was selected for this survey (equations derived from Telford 1990). The pole-dipole configuration also allowed the survey to be conducted in mountainous terrain with poor access to grid lines. The remote electrode was positioned along a track with vehicle access (Figure 1) and hence the transmitter was not required to be moved for the remainder of the survey.

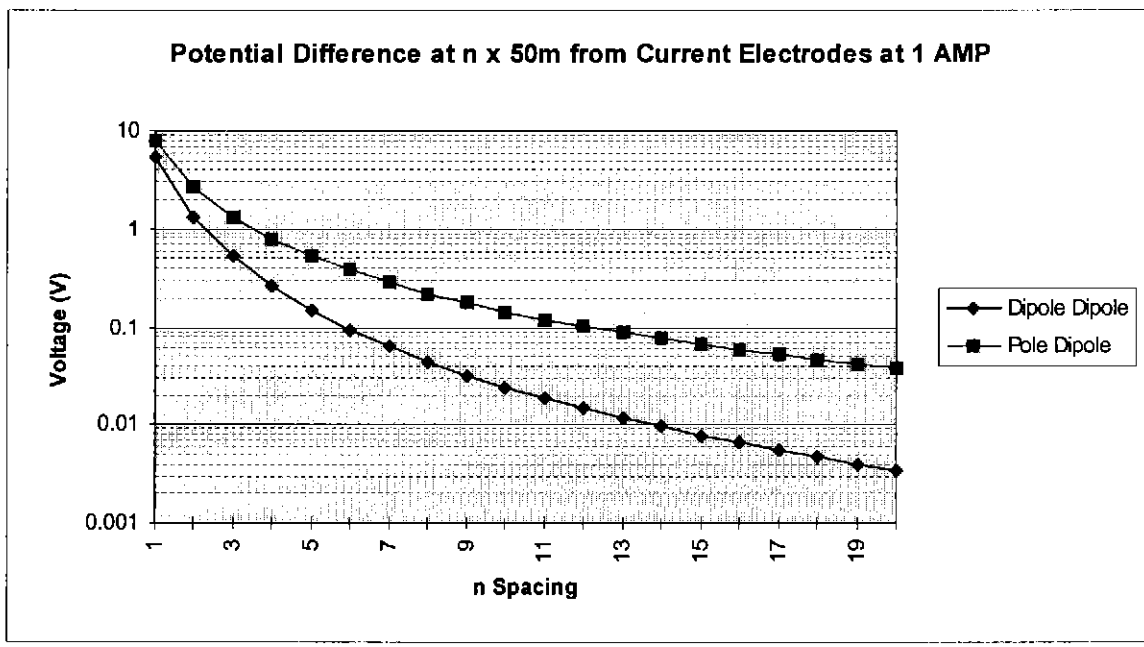


Figure 2. *Plot of the potential voltage that would be recorded on the ground for a homogenous half-space of 5000 ohm.m; input current of 1.0 A; and dipole separation of 50m.*

The survey specifications are tabulated below:

Date of Survey:	February - March 1999
Contractor:	ZONGE Engineering Pty Ltd
Survey Type:	IP
Approx. Line km's:	8.8 km
Line Spacing:	200 m
Configuration:	Pole-dipole
IP Mode:	Complex Resistivity (CRIP)
Dipole Spacing:	50 m
"n" Spacing:	8
Receiver:	GDP32

Transmitter: Zonge 30KW
Contract Number: PASEXP023

The IP parameter is provided as a decoupled phase shift between the input waveform and the received voltage in units of milli-radians at 0.125 Hz.

Porcelain pots filled with $CuSO_4$ saturated solution were used for receiver dipole electrodes. Up to six iron stakes were used at the roving transmitter electrode position, and aluminium foil lined pits at the stationary electrode position (distant electrode for IP). All eight receiver dipoles were read simultaneously for each current electrode position.

The method of data noise and repeatability control was as follows:

- Two readings are taken at each station.
- If the readings lie within 5% error then an average of the two is taken as the result.
- If the readings lie outside of 5% error, then a third reading is taken. If the error lies within 10%, then an average is taken as the result.
- If the three readings lie outside of 10% error, then a fourth reading is taken. If the error lies within of 15% then the average is taken as the result.
- Five readings is specified as a maximum amount to be recorded taking the average values as final data.

A total of 8.8 line km's of data were acquired on five separate lines. Data were acquired on lines 800N, 1000N, 1200N, 1800N, and 2000N. The location of the Beatrice Grid is displayed in the location plan of Figure 1. The location of each acquisition line within the Beatrice Grid is presented in Plan 1-5 also showing pseudosections of IP data. A total of 30.73 days were required to acquire the 8.8 line kilometres, equating to 0.3 km's per day (six dipole movements) and costing approximately $AUS7000/km. This is particularly slow production (a consequence of the terrain and survey configuration). In future it is recommended that alternative field procedures are developed to assist with data acquisition. This would include pre-laying out of multi-strand receiver wire across the entire grid prior to survey commencement.

The survey data were of good quality with high signal to noise ratios encountered for all dipole separations. It is anticipated that larger n spacings (at least out to n=12) would have been theoretically possible, effectively increasing the depth of investigation. This would have effectively doubled the cost of the survey which had already exceeded budget acquiring n=8 data.

5. MODELLING PARAMETERS

IP data were inverted using the ZONGE RS2DIP v2.05h two-dimensional smooth-model inversion software. For future reference, the modelling parameters used for both the IP and resistivity inversions are listed below:

Header(1)='From RS2DIP v2.05h Date:05/03/99 Time:13:37:42',
Header(4)='Observed data from 2000n.avg',
Array='PoleDipole',StnBeg=-2000.00,StnEnd=-500.00,
DipoleLength=50.0,StnPerDipole=50.0,LengthUnits='m',IPUnits='mrad',
NXSplit=3,NZSplit=2,
ARerrFloor=1.0,IPerrFloor=0.1,
NResIter=15,ResSmth=0.50,ResdpW=0.50,ResdxW=1.00,ResdzW=1.00,
NIPIter=15,IPSmth=0.10,IPdpW=0.01,IPdxW=0.50,IPdzW=0.50,
RMSRdat=2.15,RMSRmod=0.89,RMSPdat=1.64,RMSPmod=3.38,

The "defaults" for inversion typically have the ResSmth and IPSmth parameters as 1.0. It was determined through trial and error that the "default" settings were unsuitable, and values of 0.50 and 0.10 were applied for ResSmth and IPSmth respectively. The lower these parameters were adjusted, the less smooth the resultant inversion model. It was found that by lowering these values the following desirable outcomes were achieved:

1. The resultant inverted sections better represented geology as they were less inclined to create large "ballon-like" features often an undesirable characteristic of smooth-model inversions. Sharp geo-electrical boundaries (such as a shale horizon adjacent to a porphyry unit) are typically not well represented by a smooth-model inversion. Lowering the smoothing parameters achieved a better representation of such boundaries.
2. The error levels between the inverted data and the observed data became extremely low. Using the "default" parameters error levels were often above 50% whereas levels with the final parameters are generally less than 10%.

The inversion software also allows adjusting the "smoothness" of the model in the X and Z directions (ResdxW, ResdzW, IPdxW, and IPdzW). For a layered earth (1D) model it is desirable to lower the dzW parameter with respect to dxW. Alternatively for vertical stratigraphy it would be more suitable to lower the dxW parameter with respect to dzW. Unfortunately both geological conditions exist at Beatrice and a compromise was used by keeping these two modelling parameters equal.

6. DISCUSSION AND RESULTS

Data are provided as pseudo-sections of Apparent Resistivity and Apparent Chargeability in Plan 1 to Plan 5 for Line 800N, 1000N, 1200N, 1800N, and 2000N respectively. Common colour histogram stretches and contour intervals have been applied on all plans to allow comparison of data from line to line.

Inverted sections of depth vs resistivity and depth vs chargeability draped on the topography are provided in Plan 6 to Plan 10 for Line 800N, 1000N, 1200N, 1800N, and 2000N respectively. A section displaying the interpreted geology from the IP results is also provided on Plan 6 to Plan 10. Common colour histogram stretches and contour intervals have again been applied to the inversion results to allow comparison of data.

Results are discussed independently for each line below (it is recommended that the corresponding Plan is viewed whilst reading this section):

LINE 800N (Plan 6)

The inversion results from Line 800N feature two main features/targets. These are; (1) centred at -1600E, 450mRL and (2) centred at -700E, 350mRL. Zone (1) is a region of elevated chargeability (up to 50 mRad) within a zone of generally moderate-high resistivity. It is interpreted that this zone represents alteration (pyrite) of the Mt Sedgewick Porphyry and shale unit on the eastern limb of an anticlinal structure. This zone corresponds relatively well with a subtle geochemical anomaly and thus the combination of responses would provide a viable exploration target; -1600E, 450mRL.

Zone (2) is observed at the Itac Creek Fault and is a zone of high chargeability and low resistivity interpreted to be associated with the mineralised black shale observed at this position.

LINE 1000N (Plan 7)

Line 1000N exhibits similar response to Line 800N. The chargeable feature centred at about -1500E at a depth of 400mRL and the response at the Itac Creek Fault associated with the black shale at -750E show good correlation with the response observed on Line 800. The target Zone (1) depicted on Line 800N is slightly less chargeable to the north on Line 1000. The target Zone (2) becomes even more chargeable on Line 1000 than on the Line 800 to the south. The inverted resistivity provides evidence for tight folds just to the west of the Itac Creek Fault (observed at the surface at -700E).

LINE 1200N (Plan 8)

Line 1200N again exhibits a similar response to that observed to the south on Line 800N and Line 1000N. Good correlation is observed in the continuance of the western chargeable zone at depth (centred at -1350E and 450mRL). On Line 1200 this ovoid chargeable zone (interpreted as alteration in the Mt Sedgewick Porphyry and shales) is

situated within the synclinal axis of a broad primary fold. An interesting is that this ovoid chargeable zone has migrated from -1600E on Line 800N to -1350E on Line 1200N. Conversely, a tight fold featured adjacent to the Itac Creek Fault on Line 800N appears to migrate to the east from the south to the north (the fold axis migrates from -750E on Line 800N to -1050E on Line 1200N).

The response below the Itac Creek to the west of the Itac Creek Fault associated with the Itac Creek black shales has become considerably more chargeable and conductive than observed in the southern two lines. Drillholes MS07 and MS02 were collared directly over this position and drilled to the north, hence it has not been tested. This position would provide a valid exploration target; -800E, 550mRL.

LINE 1800N (Plan 9)

Line 1800N inversion results show evidence for a further westward migration of the anticlinal fold that was observed adjacent to the Itac Creek Fault on Line 800N. A broad fold hinge is centred on -1425E. Further evidence for this anticlinal structure is provided in the drilling results from MS05 (collared at approximately -1500E) which intersected shallow shale (60m) underlying the Mt Sedgewick Porphyry. The anticline is shown electrically by a low resistivity zone observed in the inverted resistivity section (Plan 9). This low resistivity zone is confined vertically but extensive laterally and is interpreted to represent a black shale horizon that has been intersected by drillholes MS05 and MS08. Drillhole intersections with the black shale horizon compare quite well with the IP inversion results. This interpreted fold structure is not so evident by the chargeability inversion results. It is not entirely clear why the chargeability inversion does not match the resistivity inversions. It can only be assumed that the chargeability data correspond more to alteration than directly to the shale unit. The inverted chargeability section shows a large bulk of anomalously high chargeability lying within the anticlinal fold favouring the western limb. A geological explanation is that it is conceptual that the high chargeability represents alteration and/or mineralisation underlying the black shale horizon interpreted from the resistivity inversion results. This would provide a good target for further investigation. A viable exploration drill target is provided at -1550E, 750mRL.

The black shale horizon outcropping in the Itac Creek also exhibits anomalously high chargeability and low resistivity. This position has been tested to some degree by MS01 (on Line 1600N) and MS04. Both of these holes were oriented to the west and thus drilled down-dip and cannot be regarded as quality tests of the stratigraphy.

LINE 2000N (Plan 10)

Line 2000N inversion results compare very well with those from Line 1800N to the south. The anticlinal fold structure and underlying high chargeability zone observed on Line 1800N are repeated on Line 2000N. The depths show that the black shale horizon is shallower on this Line 2000N providing further evidence for a southerly plunge on the geology of the region (supported by data from Line 800N-1800N). Again the chargeable

zone in the anticlinal fold is considered to conceptually represent an alteration zone underlying the black shale horizon and thus provide a good exploration target.

The black shale within the Itac Creek again exhibits anomalously high chargeability and low resistivity.

7. RECOMMENDATIONS

Three targets have been recommended for drill testing as a results of the IP survey results. These have been selected following analysis of the survey data and discussion with project geologists.

i) The initial target is defined as the highly chargeable zone lying within the fold hinge interpreted from the resistivity inversion section on the western end of Line 1800N and 2000N. This anomalous chargeability zone is conceptually a zone of sulphide alteration underlying a black shale horizon and thus provides a good target for Zn-Pb-Ag-Au mineralisation based upon mineralisation models accepted for the region. A drill target is defined at -1550E, 750mRL to test this anomaly.

ii) The second target is defined on Line 1200N just to the west of the Itac Creek Fault position. The resistivity and chargeability are particularly anomalous at this position on Line 1200N. Data on Line 1400N and Line 1600N were not collected and it should be kept in mind that the response might improve further to the north on these two lines. The position on Line 1400N should has been adequately tested by MS07 and MS02. A target to test the anomaly on Line 1200N is defined at -800E, 550mRL.

iii)The second target is the zone of high chargeability centred at -1600E, 450mRL on Line 800N. This zone is interpreted to lie within the intercalated Mt Sedgewick Porphyry and shale as a region of sulphide alteration. The base of the black siltstone horizon directly underlying this interpreted alteration zone (if it does exist) would provide a target for Zn-Pb-Ag-Au mineralisation. Conceptually the alteration of the porphyry might represent hanging wall alteration through continuance of expulsion of hydrothermal fluids during deposition or later remobilisation of sulphides from below/within the black shale.

Technical recommendations following completion of the survey are as follows:

i) Field procedures need to be addressed in order to make acquisition of pole-dipole (or dipole-dipole) data more economic. It is recommended that multi-strand wire be purchased and laid out in advance prior to mobilisation of the survey crew.

ii) The acquisition of survey data up to n=8 was integral to mapping the base of the black shale horizon on Line 800N, 1800N, and 2000N. On Line 1000N and 1200N the base of the shale horizon is inferred from the inversion results. If data had only been acquired to n=6 then it is unlikely that the survey would have resulted in confident conclusions as to the geological structure of the region. It is recommended that further acquisition of IP data using large n spacings is warranted. The data quality would have most likely permitted acquisition of survey data out to at least n=12.

8. KEYWORDS AND LOCALITY

Keywords

chargeability, conductivity, disseminated, down-hole, IP, massive, orebody, pole-dipole, pyrite, sphalerite, shale, sulphides

Locality

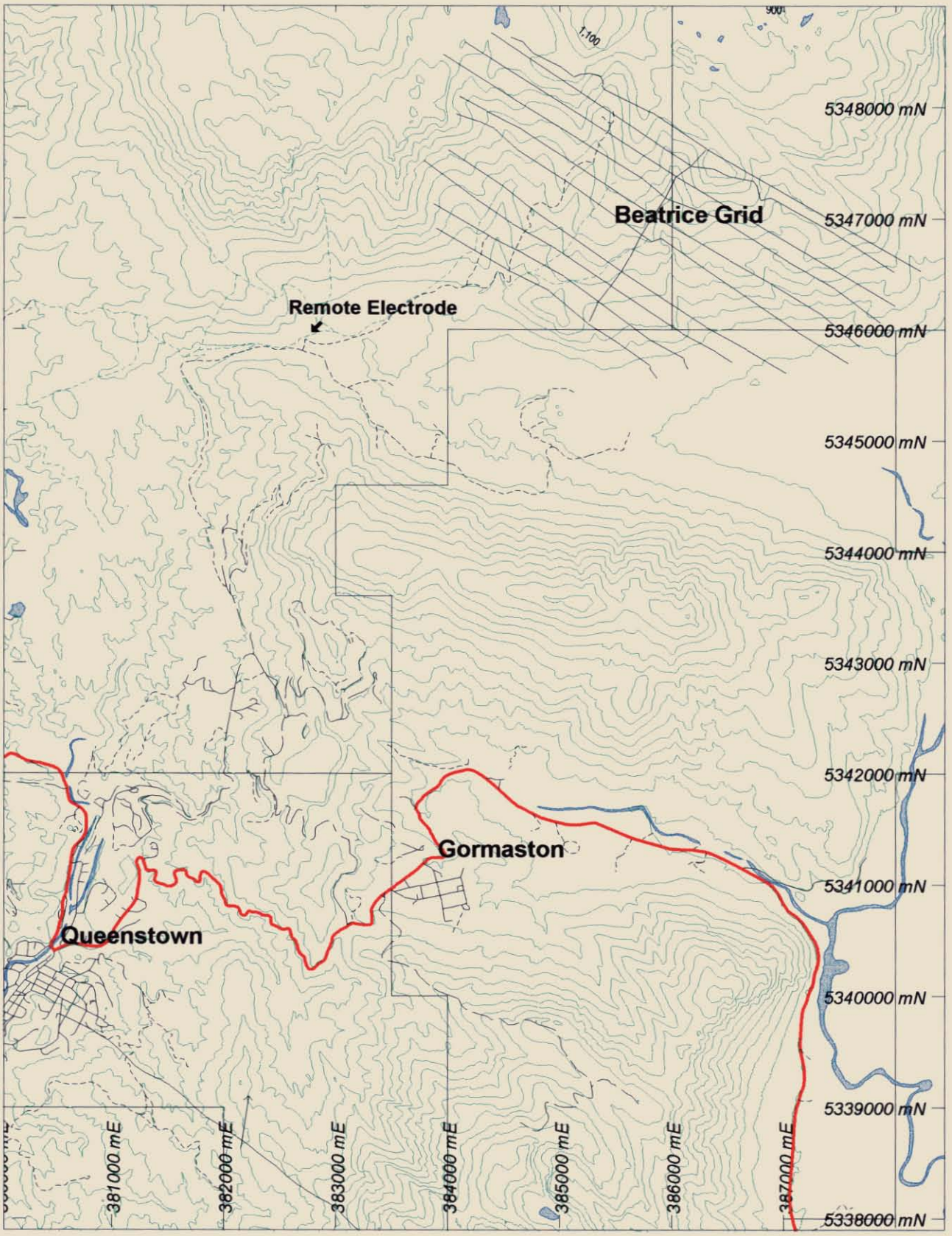
1:100K Sophia 8014

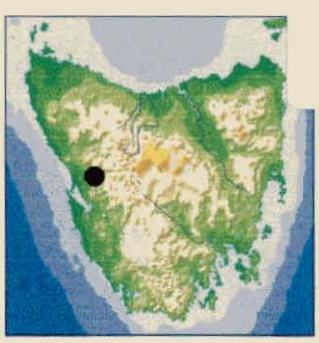
1:250K SK\55-SW Sheet

9. REFERENCES

Denwer, K. D., 1998, Beatrice Prospect Literature Review, In-house Technical Note for Pasminco Exploration, *not published*

Telford, W. M., et al, 1990, Applied Geophysics, 2nd Ed, Cambridge University Press





5 cm

SCALE 1:50,000

0 1.25 2.5

Kilometres

Projection: UTM
Datum: AGD84
Zone: 55

PASMINCO EXPLORATION
ETS Melbourne

TASMANIA

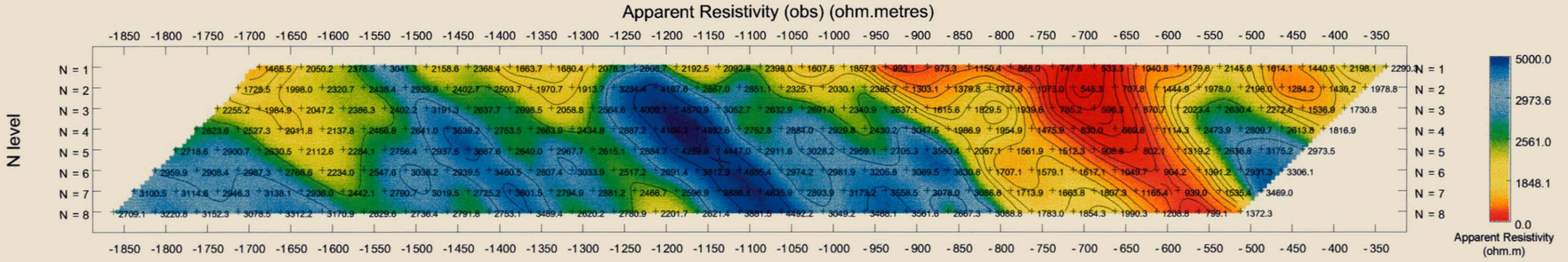
Date: August 1999	QUEENSTOWN EL 6/98
Author: C Dauth	BEATRICE PROSPECT
Office: ETS	Location Plan
Ref:	
Scale: 1:50 000	Projection: SUTM55 AGD84 Figure No:

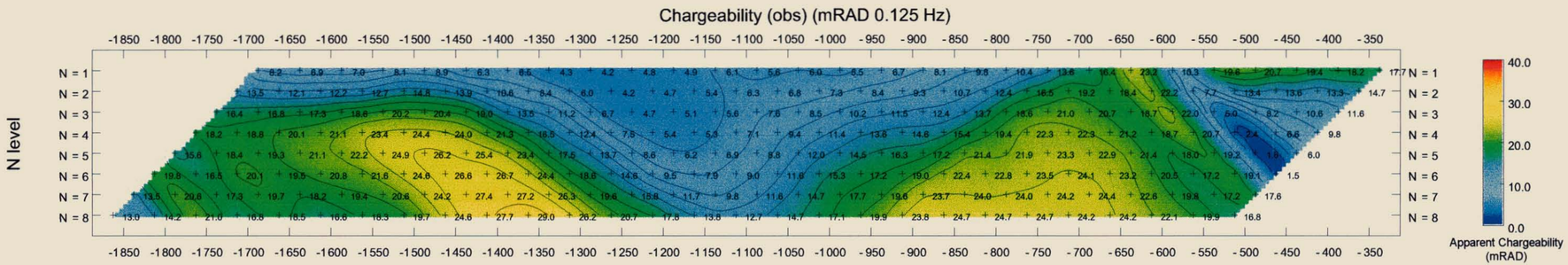
645384

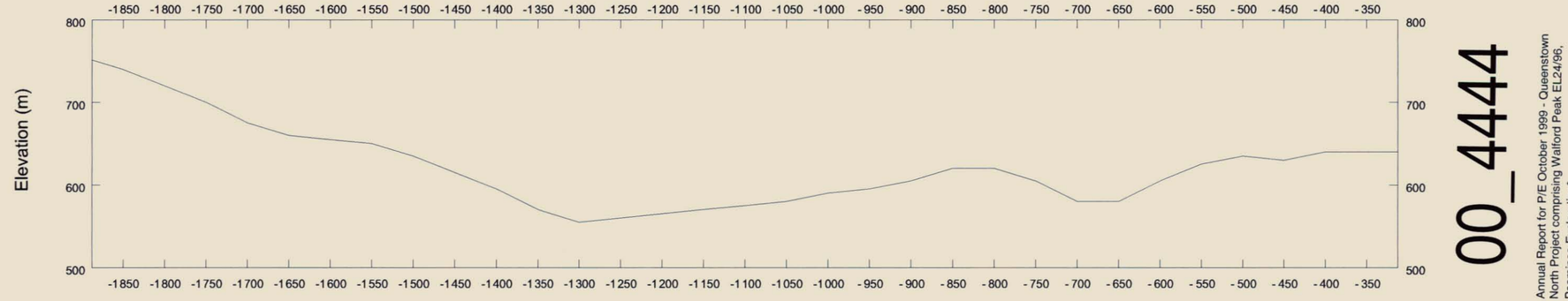
PLAN 1

PASMINCO EXPLORATION

BEATRICE PROSPECT
QUEENSTOWN EL6/98
IP Pseudosections
LINE 800N







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645385

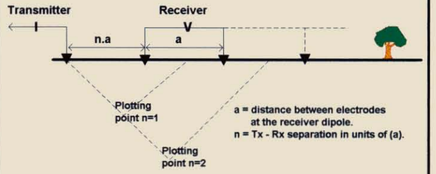
Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

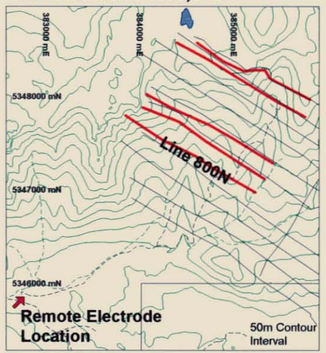
5 cm

Scale 1:5000

0 0.25 0.5
Kilometres



Location Plan 1:50,000

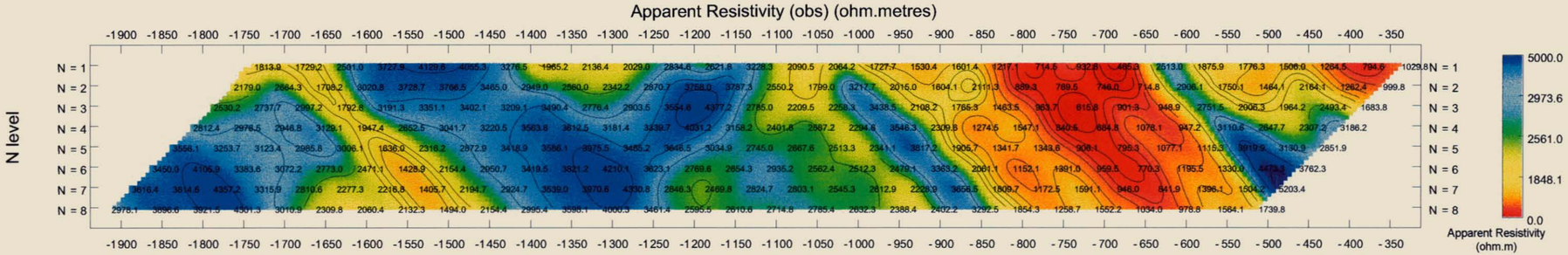


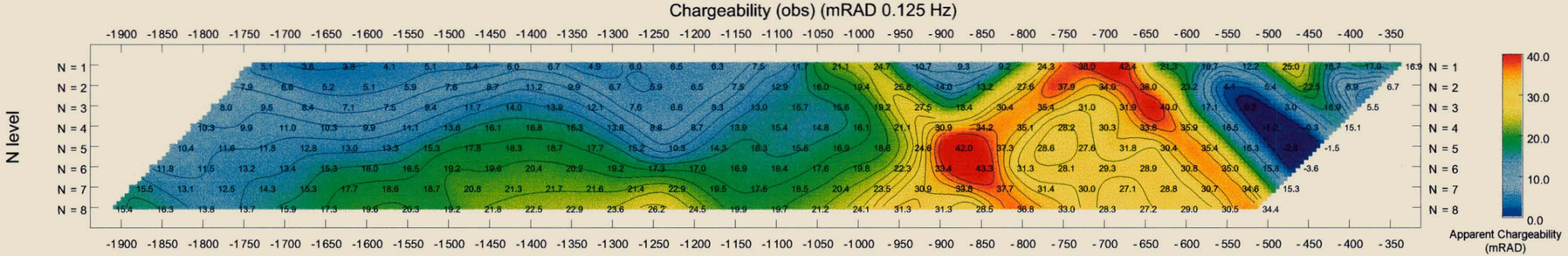
Compiled by C Dauth *April 1999*

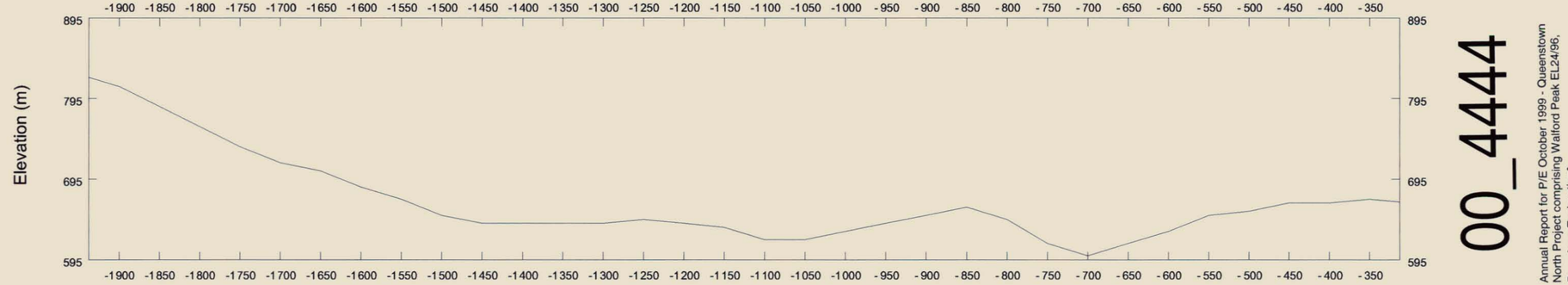
PLAN 2

PASMINCO EXPLORATION

BEATRICE PROSPECT
QUEENSTOWN EL6/98
IP Pseudosections
LINE 1000N







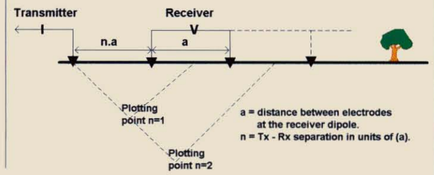
Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

5 cm

Scale 1:5000

0 0.25 0.5
Kilometres



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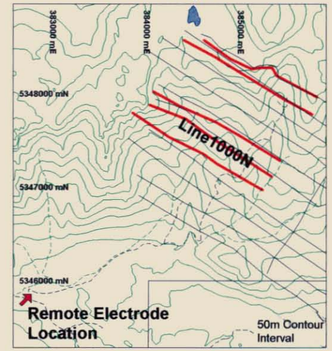

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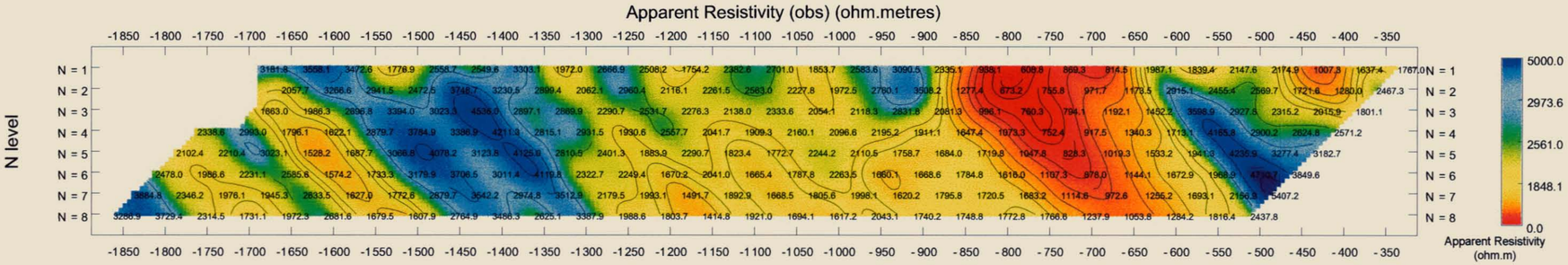
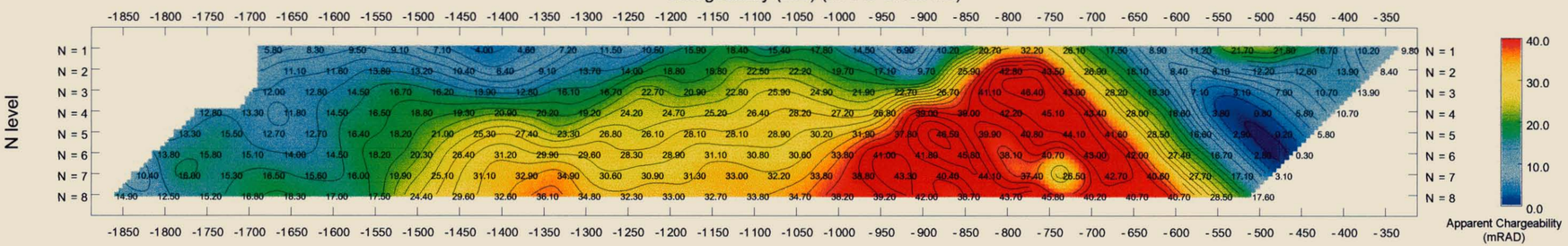
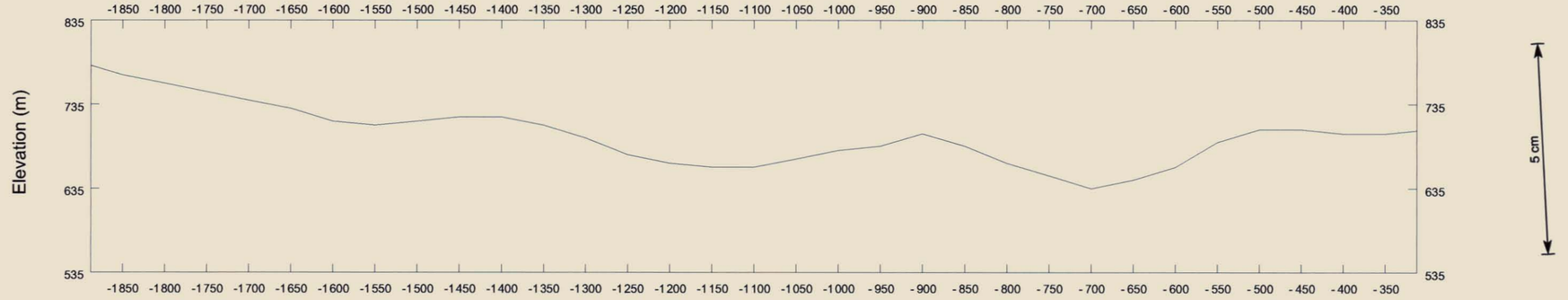
PLAN 3

PASMINCO EXPLORATION

BEATRICE PROSPECT
QUEENSTOWN EL6/98
IP Pseudosections
LINE 1200N







645387

Survey Parameters

Date of Survey: February - March 199
Contractor: ZONGE Engineering Pty
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Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

Scale 1:5000

0 0.25 Kilometres

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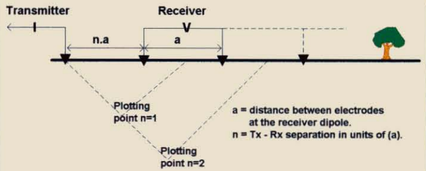
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL



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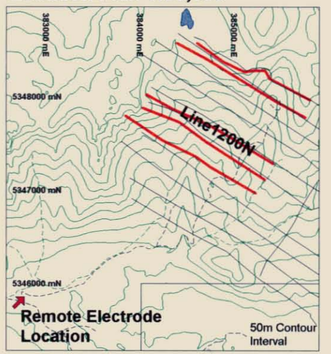

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PLAN 4

PASMINCO EXPLORATION

BEATRICE PROSPECT
QUEENSTOWN EL6/98
IP Pseudosections
LINE 1800N

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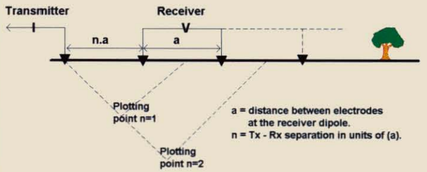
Survey Parameters

Date of Survey: February - March 199
Contractor: ZONGE Engineering Pty l
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

Scale 1:5000

0 0.25 Kilometres



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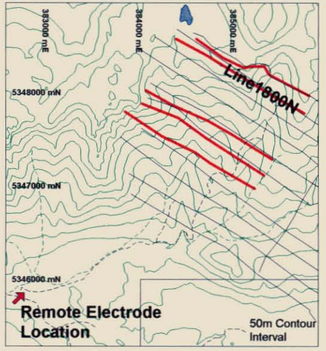
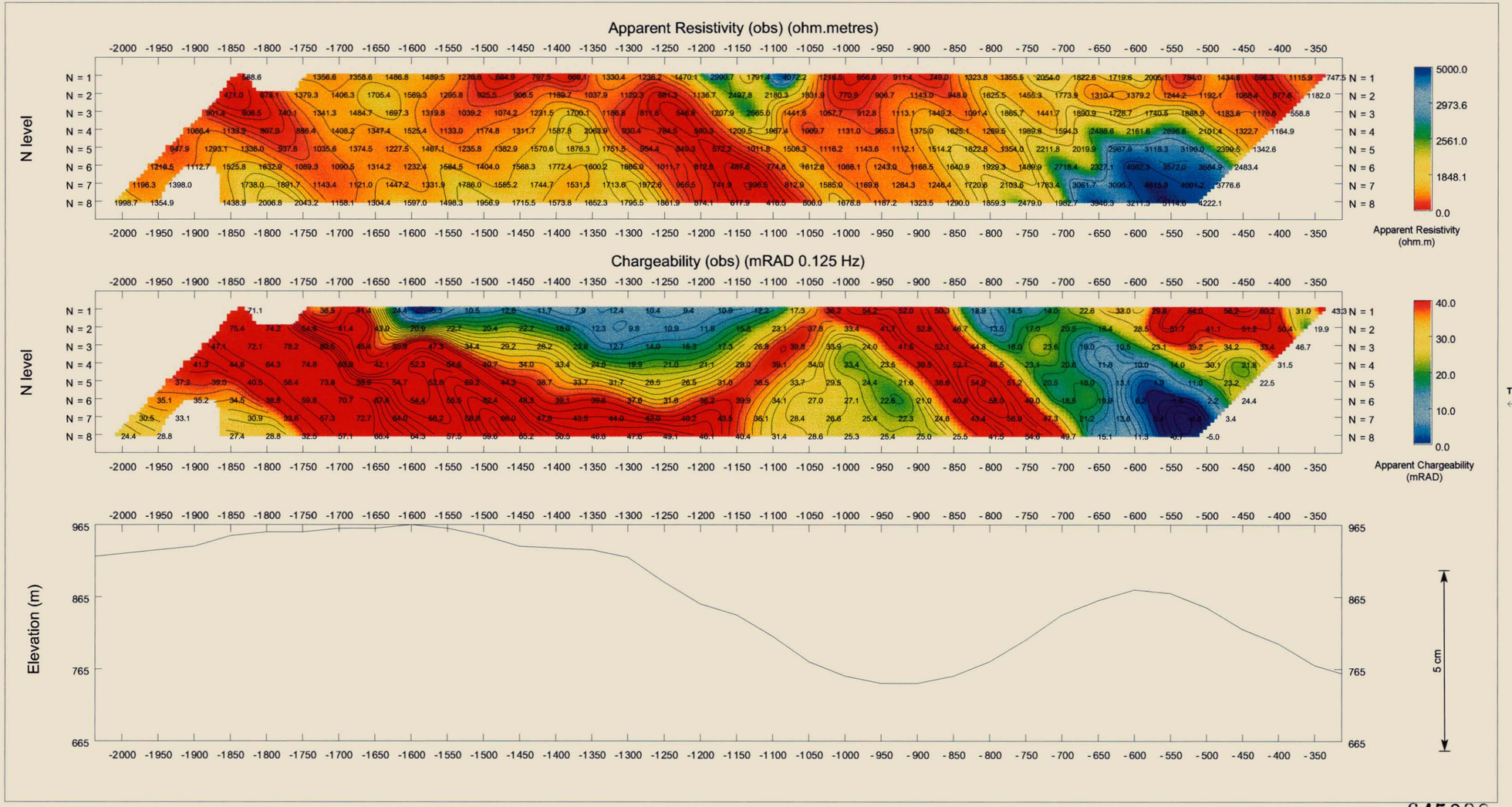


Compiled by C Dauth April 1999



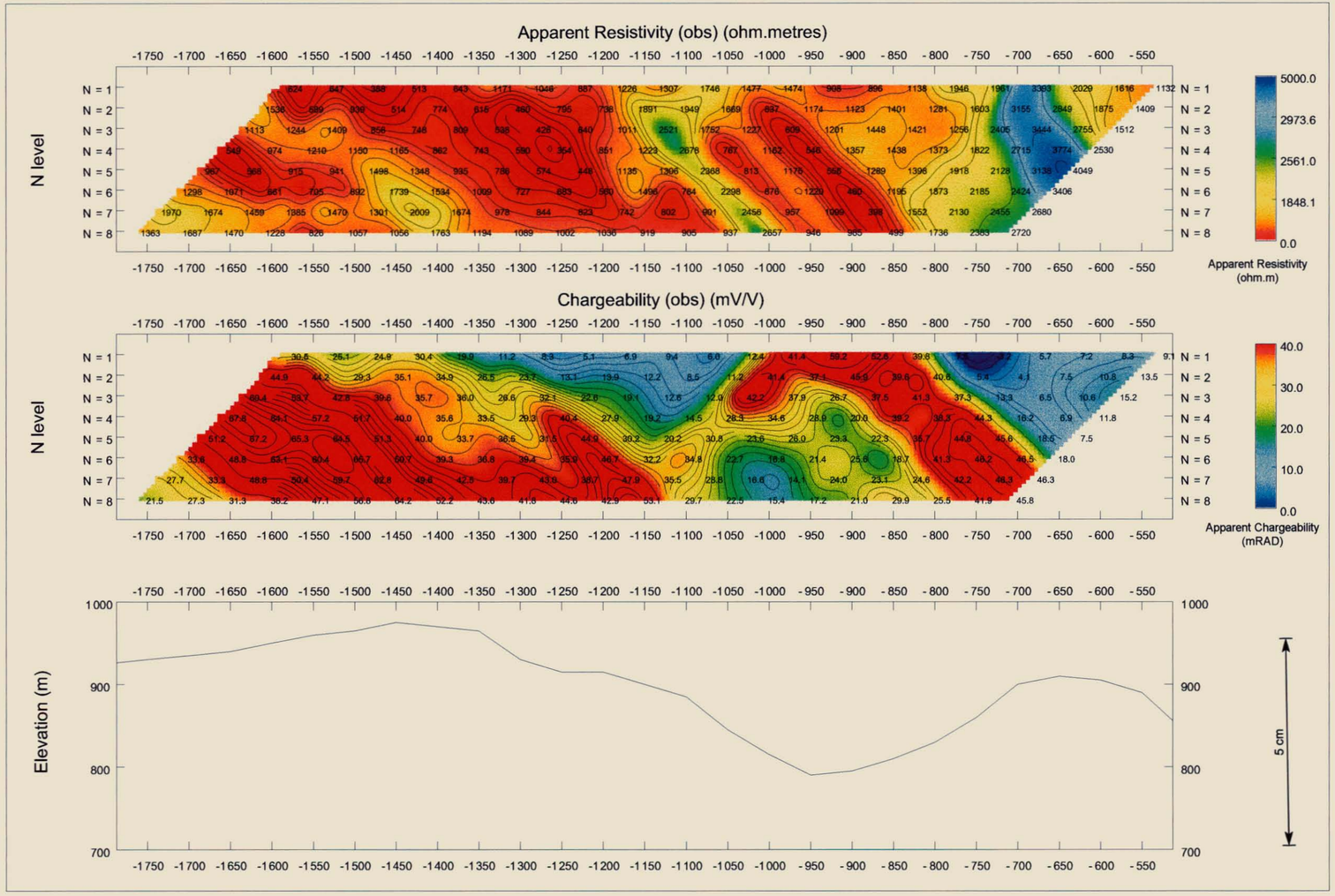
645388

PLAN 5

PASMINCO EXPLORATION

BEATRICE PROSPECT
QUEENSTOWN EL6/98
IP Pseudosections
LINE 2000N

00_4444



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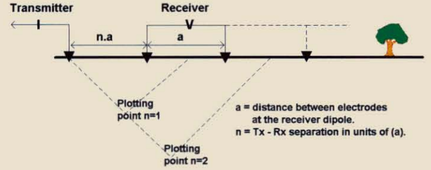
Survey Parameters

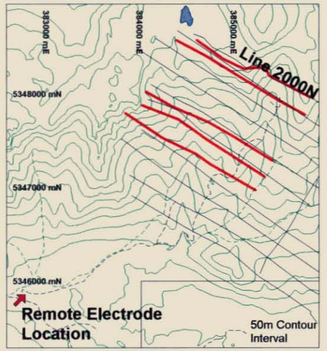
Date of Survey: February - March 199
Contractor: ZONGE Engineering Pty
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

Scale 1:5000

0 0.25 Kilometres



Location Plan 1:50,000



Compiled by C Dauth April 1999

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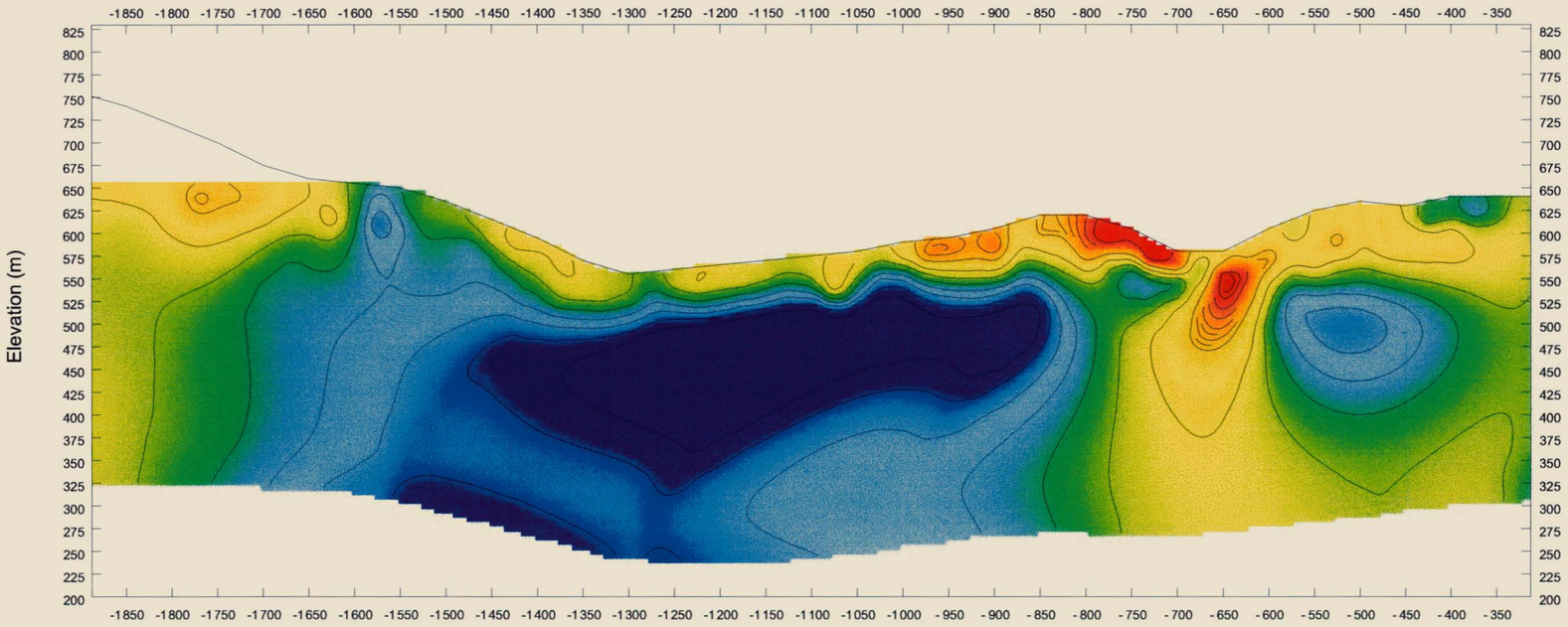
PLAN 6

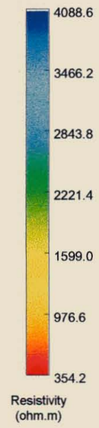
645390

PASMINCO EXPLORATION

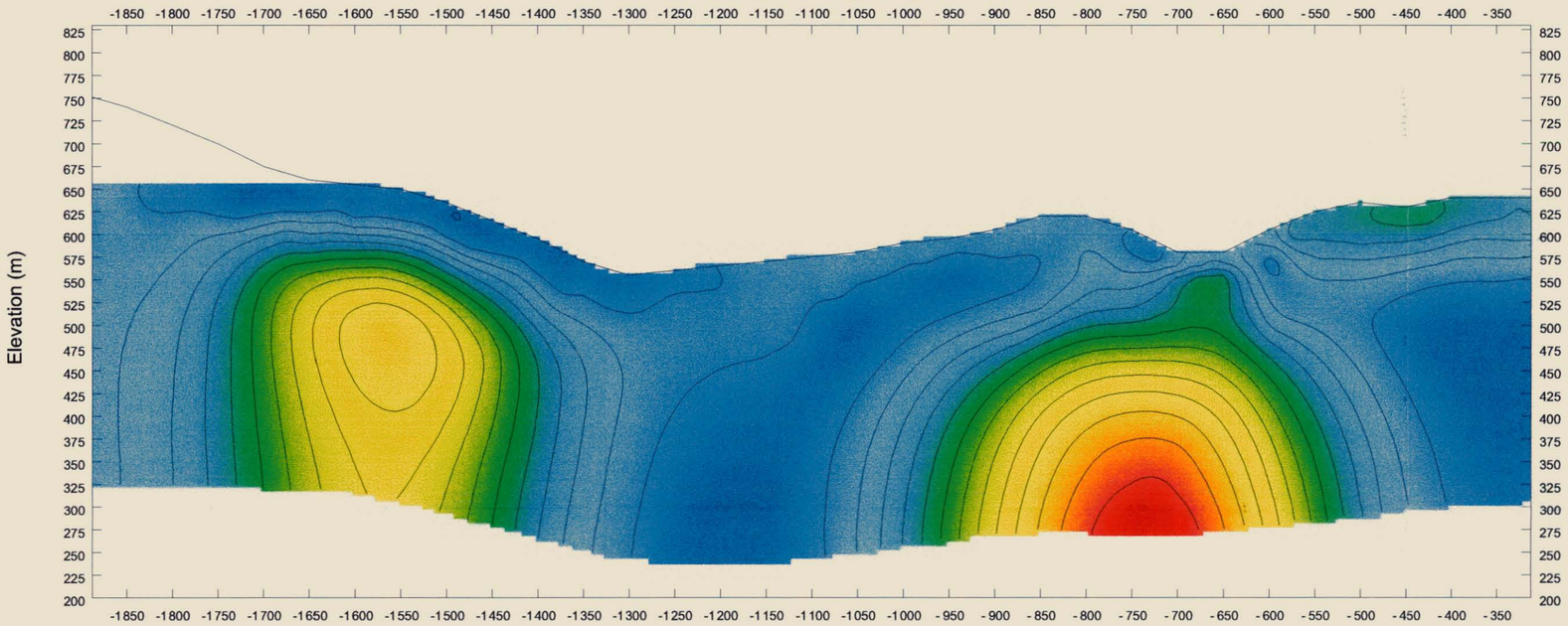
BEATRICE PROSPECT
QUEENSTOWN EL6/98
Smooth-Model IP Inversion
LINE 800N

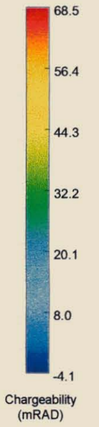
Inverted Resistivity



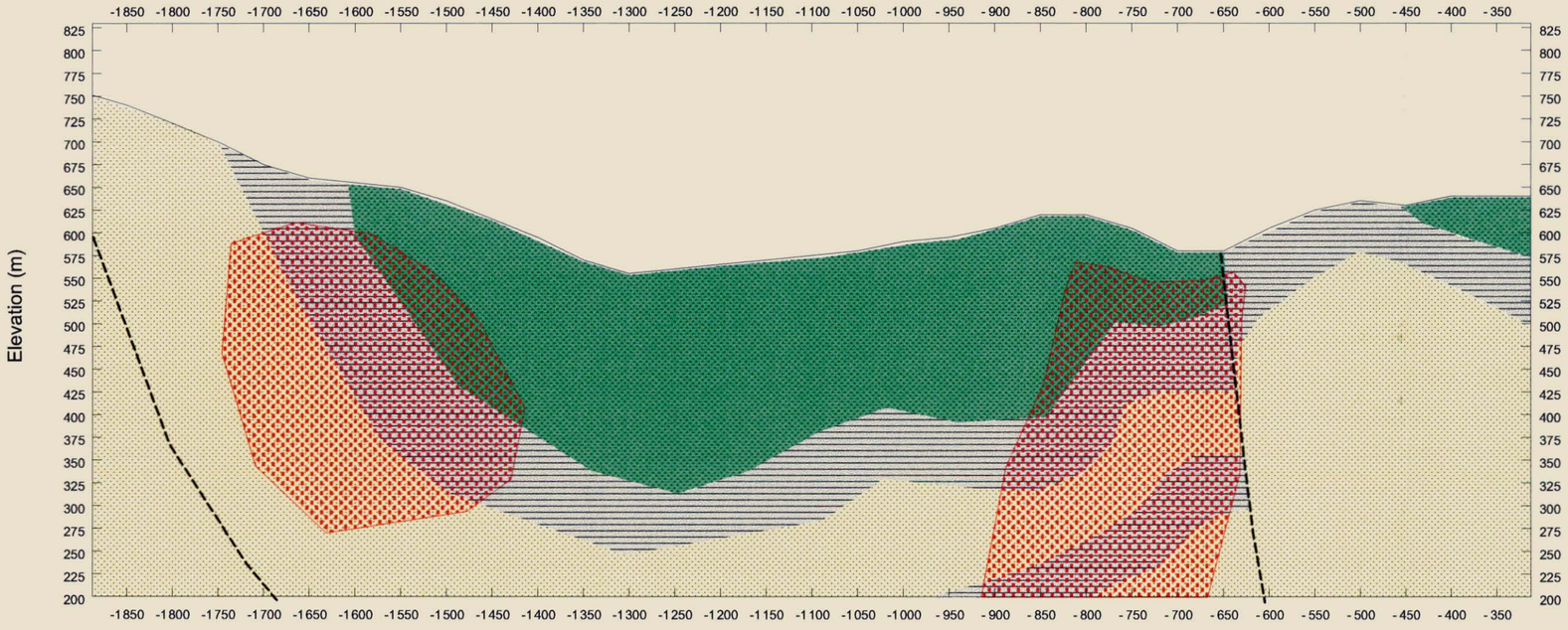


Inverted Chargeability





Geological Interpretation



Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

Model Parameters

Software: ZONGE RS2DIP v2.05h
Date: April 1999
Operator: C Dauth
NResIter=15
ResSmth=0.50
ResdpW=0.50
ResdxW=1.00
ResdzW=1.00
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IPSmth=0.10
IPdpW=0.01
IPdxW=0.50
IPdzW=0.50

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Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

5 cm

Scale 1:5000

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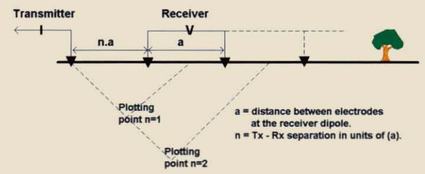
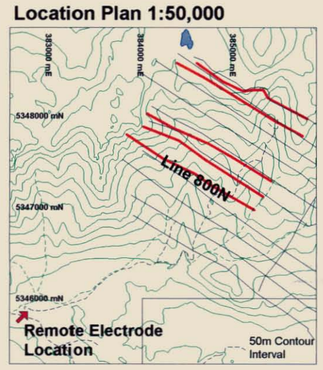
Kilometres



Location Plan 1:50,000



GEOLOGY LEGEND

- Porphyry
- Shale
- Volcaniclastics and Felsic Volcanics
- Interpreted Alteration

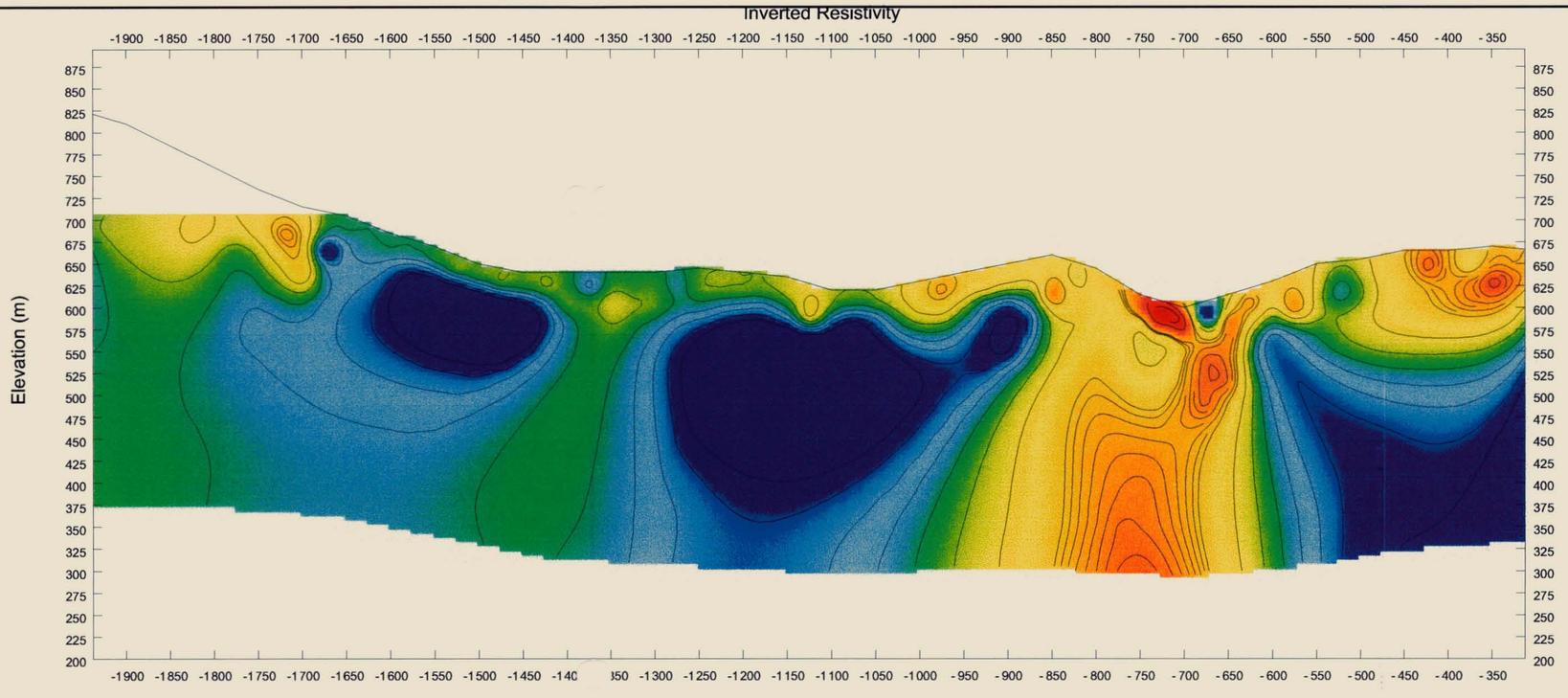
Compiled by C Dauth *April 1999*

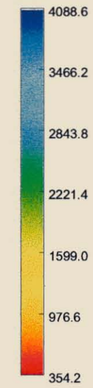
PLAN 7

PASMINCO EXPLORATION

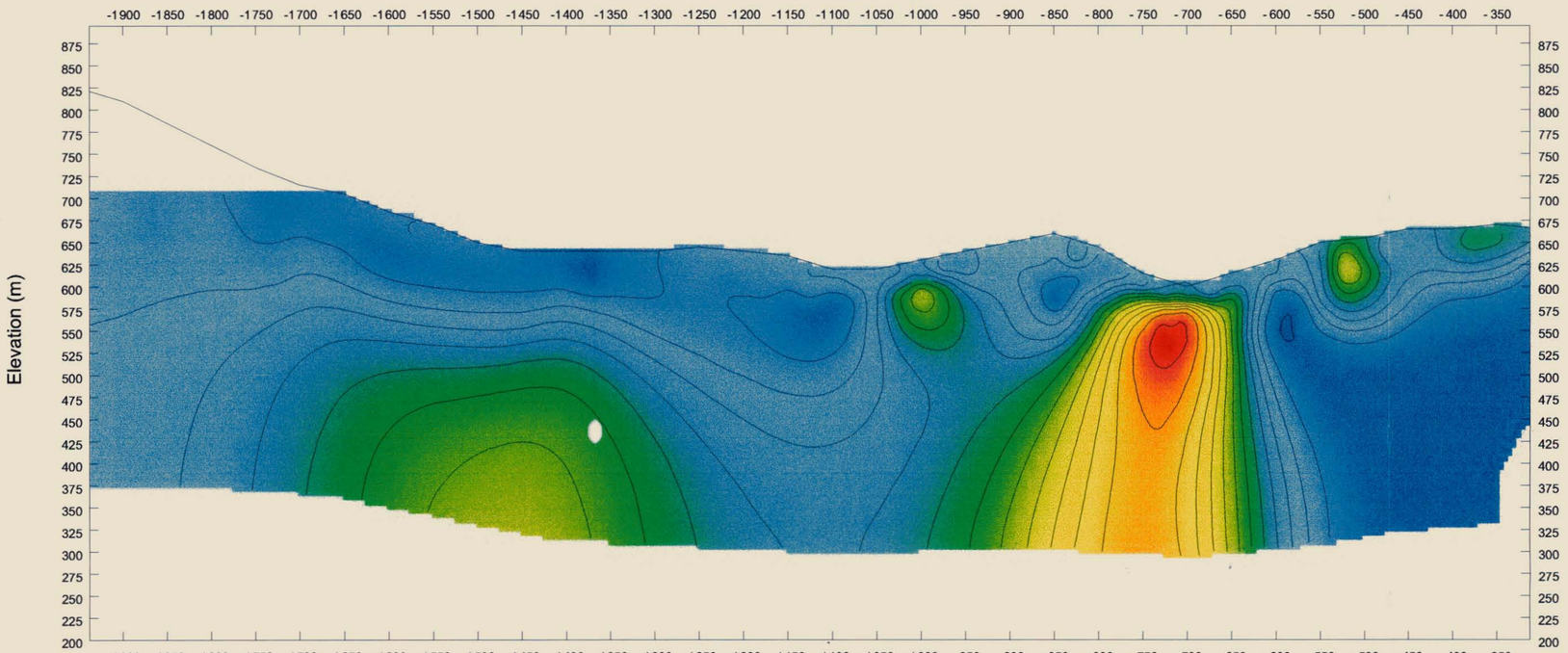
BEATRICE PROSPECT
QUEENSTOWN EL6/98
Smooth-Model IP Inversion
LINE 1000N

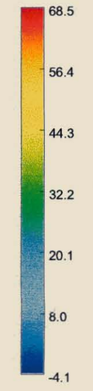
Inverted Resistivity



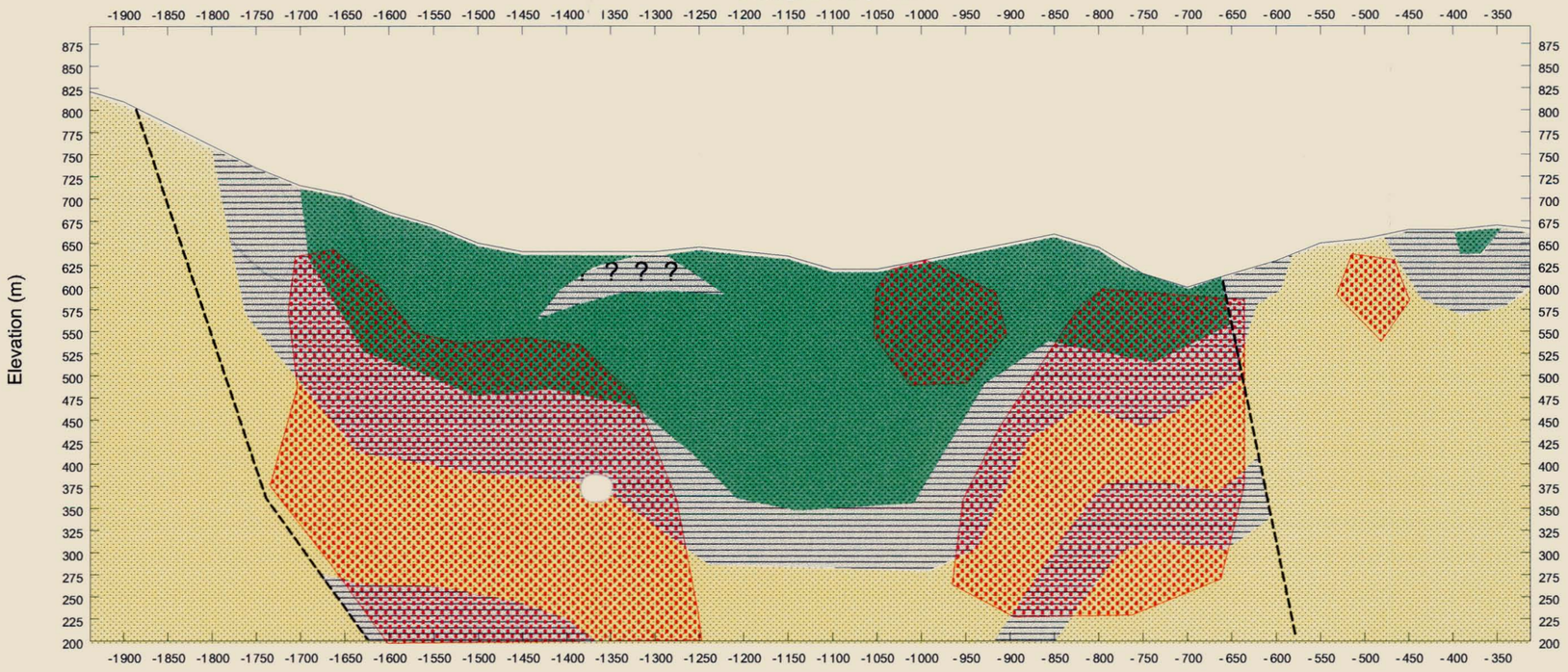


Inverted Chargeability





Geological Interpretation



Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

Model Parameters

Software: ZONGE RS2DIP v2.05h
Date: April 1999
Operator: C Dauth
NResIter=15
ResSmth=0.50
ResdpW=0.50
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ResdzW=1.00
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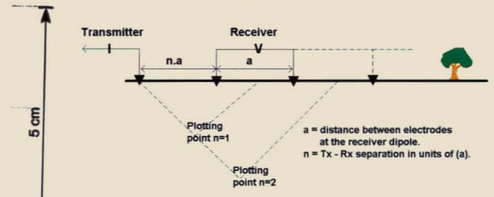
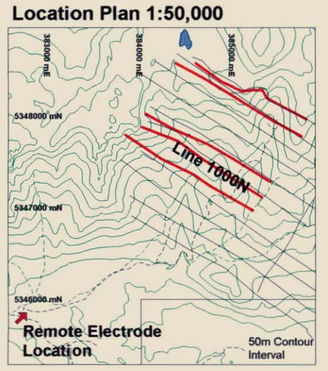
Dauth, C.; Denver, K.; McNeill EL20/98; EL24/96; EL

Scale 1:5000



Location Plan 1:50,000



GEOLOGY LEGEND

- Porphyry
- Shale
- Volcaniclastics and Felsic Volcanics
- Interpreted Alteration

Compiled by C Dauth *April 1999*

PLAN 8

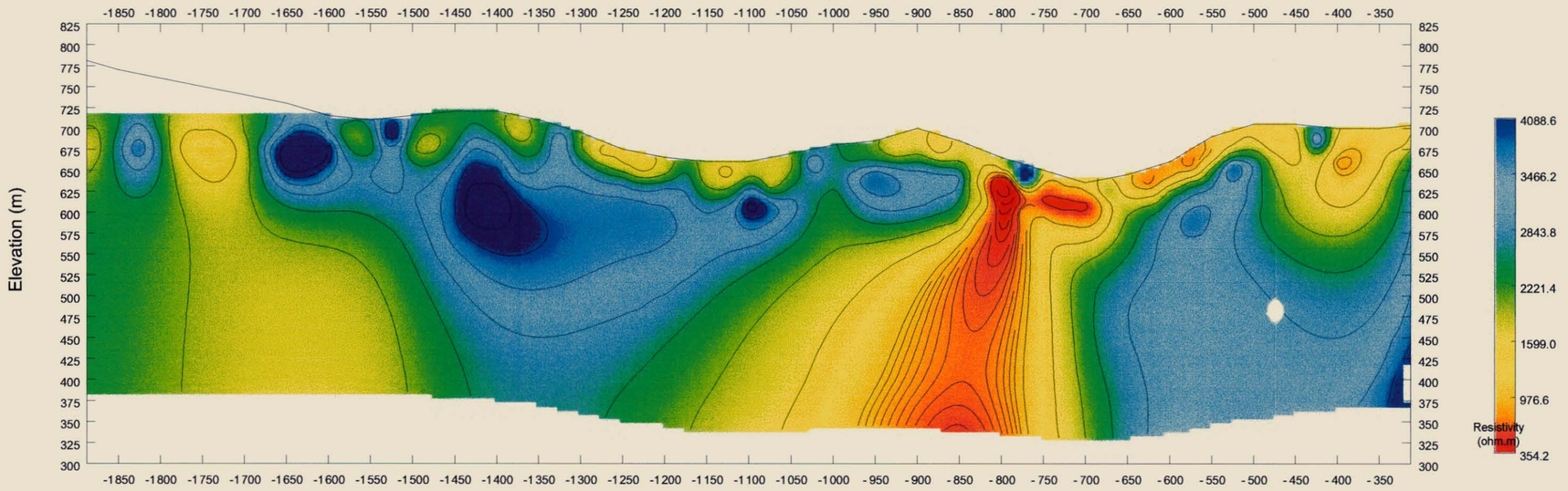
00_4444

Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96,
Pasminco Exploration*
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

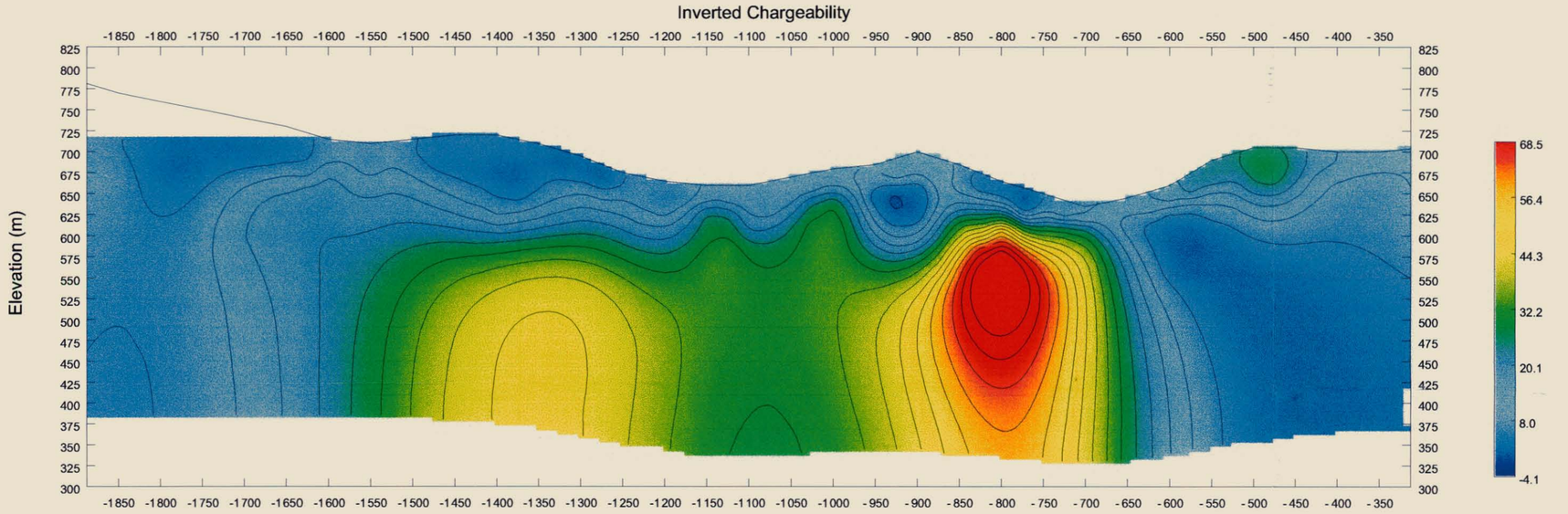
PASMINCO EXPLORATION

BEATRICE PROSPECT
QUEENSTOWN EL6/98
Smooth-Model IP Inversion
LINE 1200N

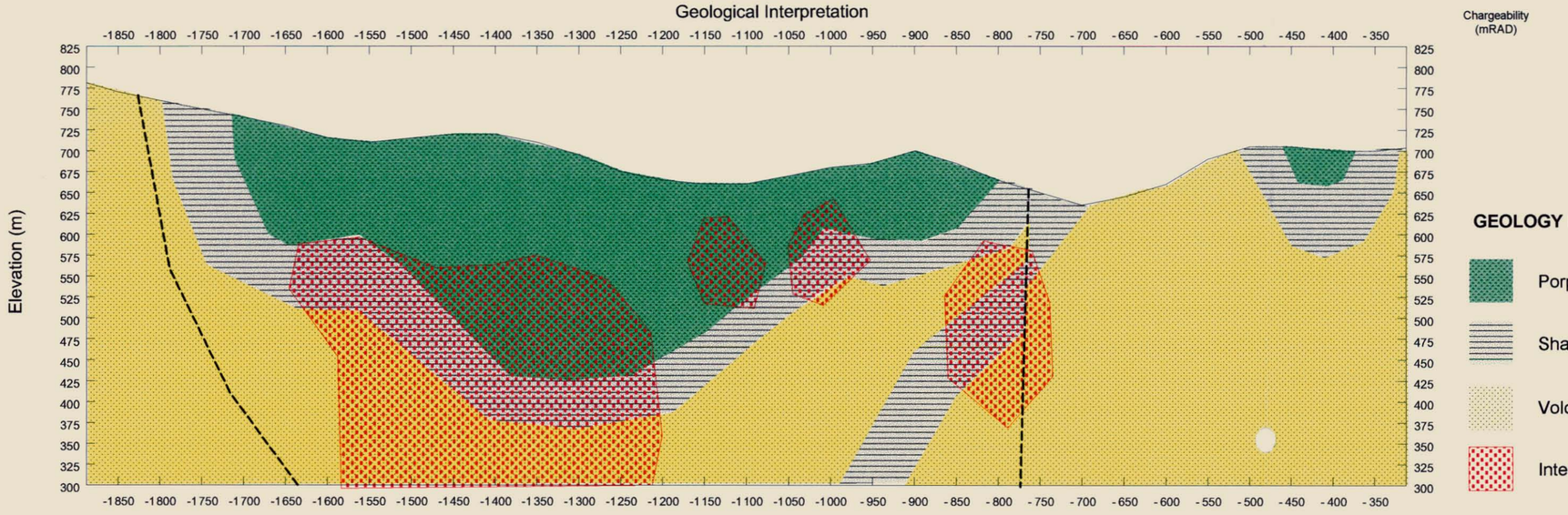
Inverted Resistivity



Inverted Chargeability



Geological Interpretation



Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

Model Parameters

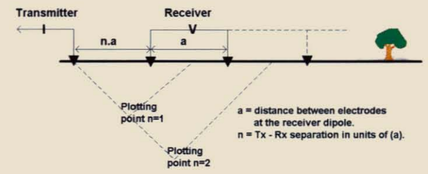
Software: ZONGE RS2DIP v2.05h
Date: April 1999
Operator: C Dauth
NResIter=15
ResSmth=0.50
ResdpW=0.50
ResdxW=1.00
ResdzW=1.00
NIPIter=15
IPSmth=0.10
IPdpW=0.01
IPdxW=0.50
IPdzW=0.50

645392

5 cm

Scale 1:5000

0 0.25 0.5
Kilometres



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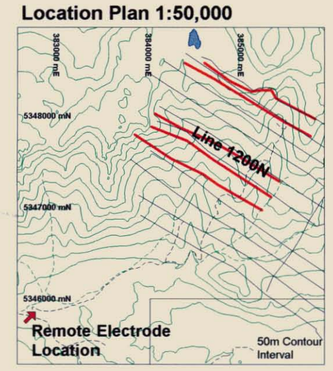


GEOLOGY LEGEND

- Porphyry
- Shale
- Volcaniclastics and Felsic Volcanics
- Interpreted Alteration

Compiled by C Dauth *April 1999*

PLAN 9

00_4444

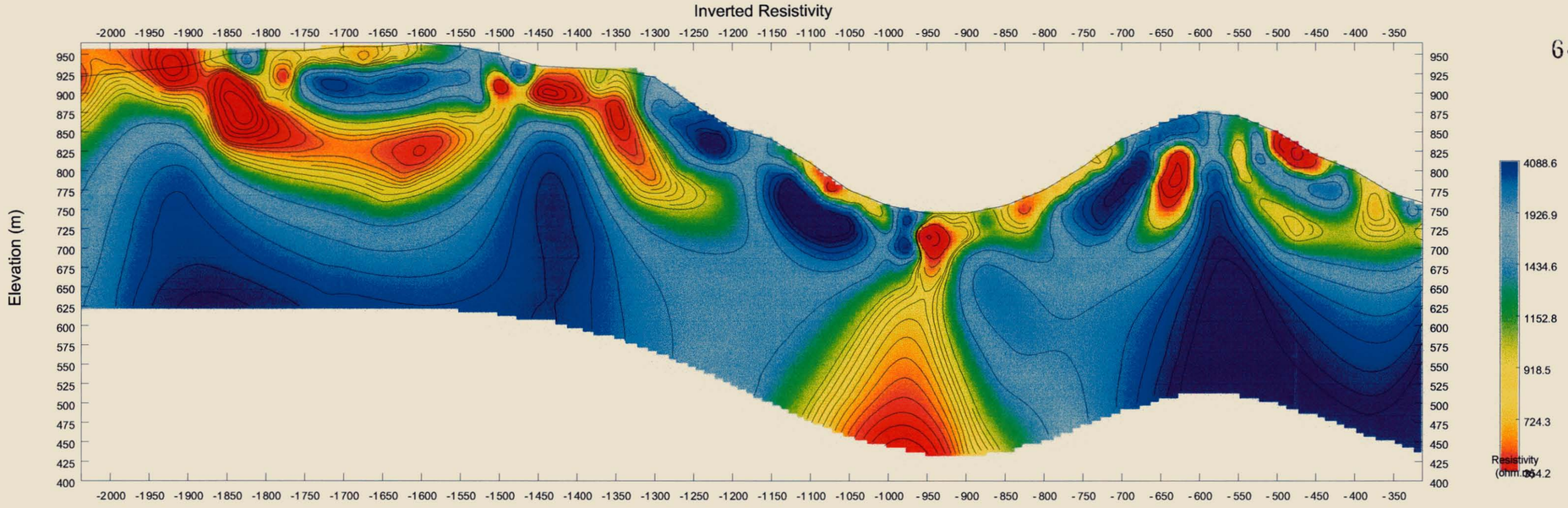
Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration*
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

PASMINCO EXPLORATION

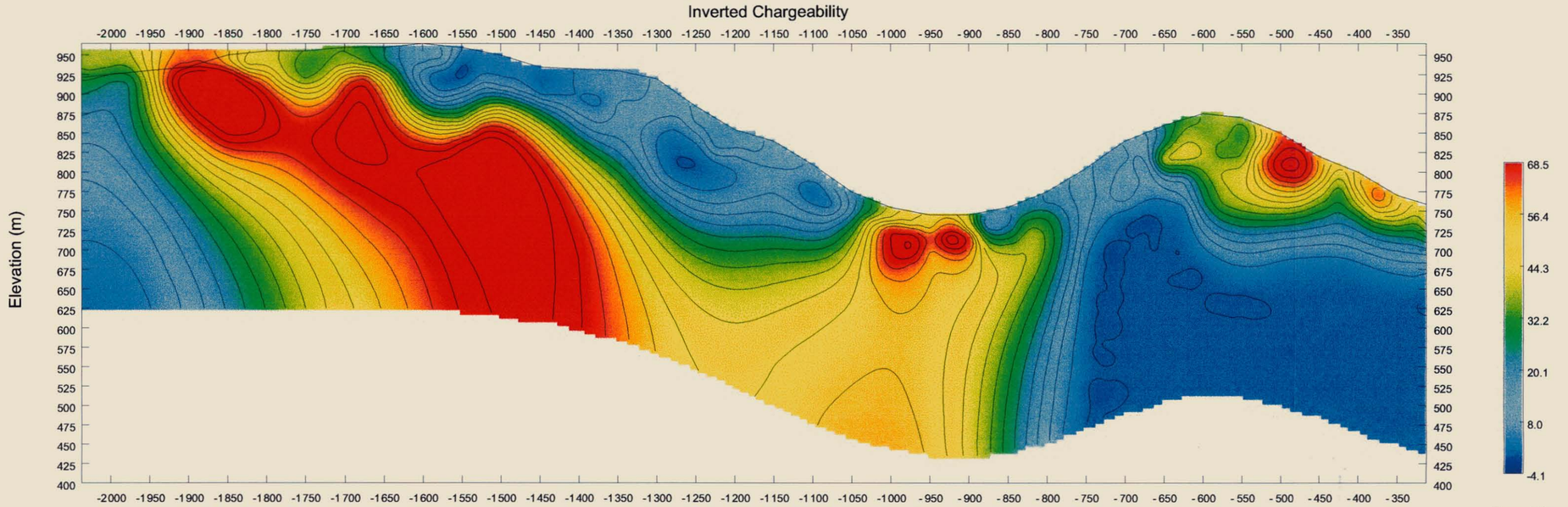
BEATRICE PROSPECT
QUEENSTOWN EL6/98
Smooth-Model IP Inversion
LINE 1800N

645393

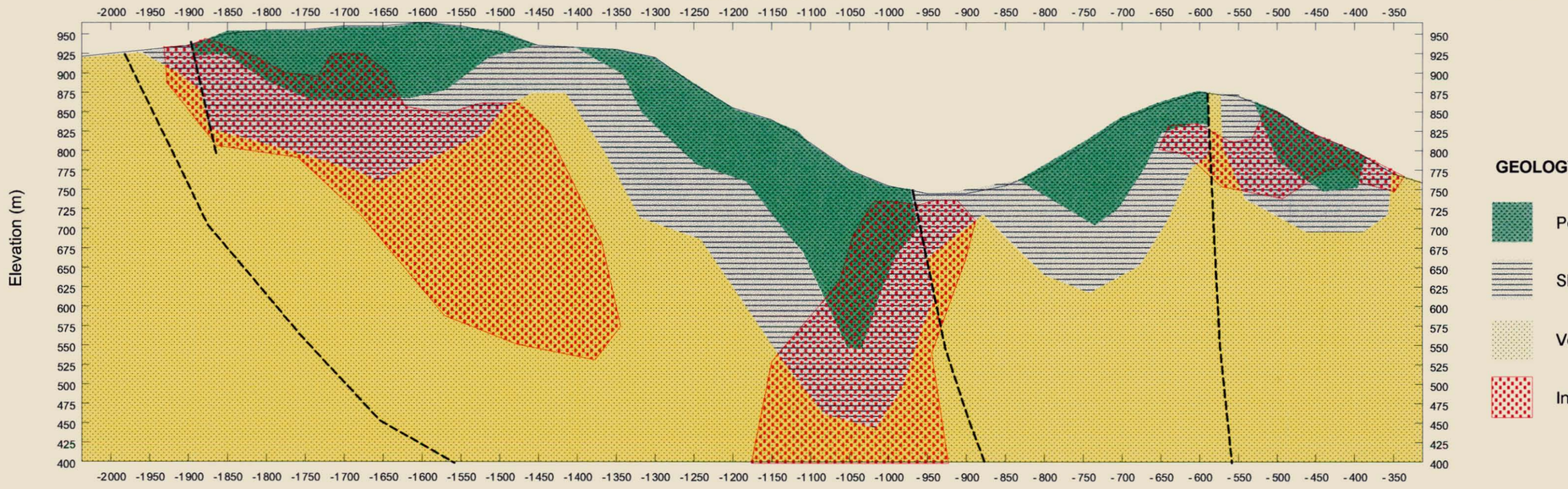
Inverted Resistivity



Inverted Chargeability



Geological Interpretation



Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

Model Parameters

Software: ZONGE RS2DIP v2.05h
Date: April 1999
Operator: C Dauth
NResIter=15
ResSmth=0.50
ResdpW=0.50
ResdxW=1.00
ResdzW=1.00
NIPIter=15
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IPdxW=0.50
IPdzW=0.50

5 cm

Scale 1:5000

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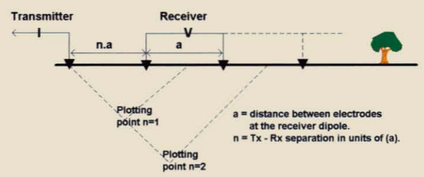
Kilometres



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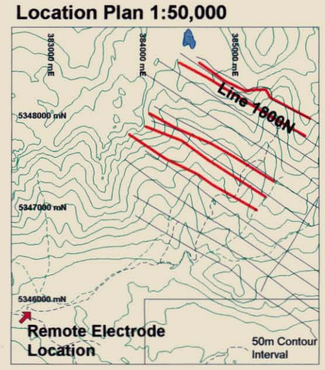


GEOLOGY LEGEND

- Porphyry
- Shale
- Volcaniclastics and Felsic Volcanics
- Interpreted Alteration

Compiled by C Da...

PLAN 10

645394

00_4444

Annual Report for P/E October 1999 - Queenstown North Project comprising Walford Peak EL24/96, Pasminco Exploration* Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL

PASMINCO EXPLORATION

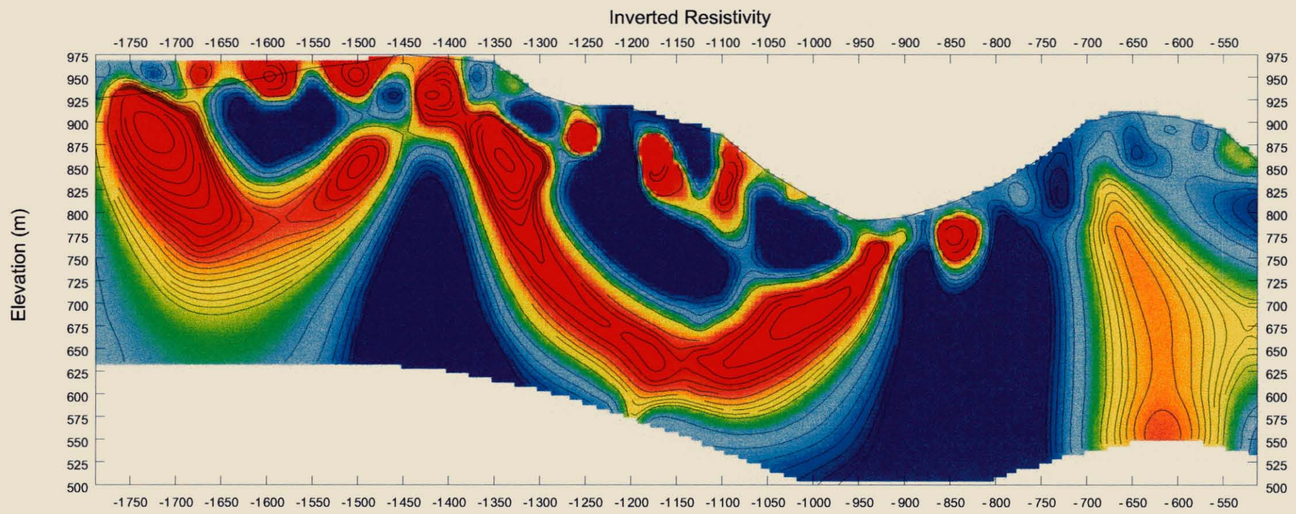
BEATRICE PROSPECT QUEENSTOWN EL6/98 Smooth-Model IP Inversion LINE 2000N

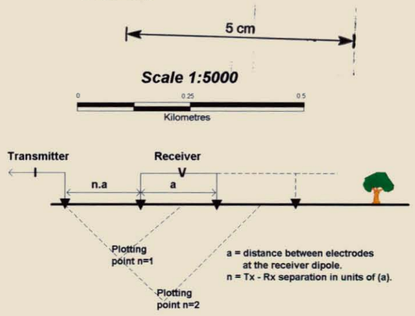
Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

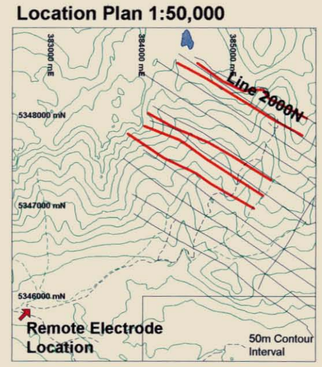
Model Parameters

Software: ZONGE RS2DIP v2.05h
Date: April 1999
Operator: C Dauth
NResIter=15
ResSmth=0.50
ResdpW=0.50
ResdxW=1.00
ResdzW=1.00
NIPIter=15
IPSmth=0.10
IPdpW=0.01
IPdxW=0.50
IPdzW=0.50





Location Plan 1:50,000



GEOLOGY LEGEND

- Porphyry
- Shale
- Volcaniclastics and Felsic Volcanics
- Interpreted Alteration

Compiled by C Dauth *April 1999*

QUEENSTOWN NORTH PROJECT
COMPRISING:
WALFORD PEAK EL 24/96
QUEENSTOWN EL 6/98
BEATRICE EL 20/98

ANNUAL REPORT
FOR THE PERIOD ENDING OCTOBER 1999

Volume 3: Appendices 7-12

3 of 3

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Date: May 2000

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Pasminco Exploration, Melbourne
Pasminco Exploration, Rosebery

Melbourne File No: VC 296

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APPENDIX7

Modelling and Interpretation of CSAMT Data from the Beatrice Prospect - April 1999 - EL6/98
Pasminco Exploration*
Dauth, C. EL6/98

645396

BEATRICE PROSPECT

Modelling and Interpretation of CSAMT data

from the Beatrice Prospect,

April 1999, C. Dauth.

PASMINCO EXPLORATION

MODELLING AND INTERPRETATION OF CSAMT DATA FROM THE BEATRICE PROSPECT APRIL 1999

EL 6/98

Author: Chris Dauth

Date: May 1999

Submitted To: B Murphy

Copies To: Pasminco Exploration, Melbourne

Submitted By:

Accepted By:

Melbourne Report No: VC 251

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APPENDIX 1

1. SUMMARY

The Beatrice Prospect is situated in Western Tasmania within EL 6/98 approximately 7 kilometres north of the town of Queenstown. During April 1999, a total of 4 line kilometres of controlled source audio magneto-telluric (CSAMT) data using the H-polarisation configuration were acquired over two lines at the Beatrice Prospect. CSAMT is a deep penetrating electromagnetic geophysical technique that responds to conductivity contrasts in the sub-surface.

Data were acquired by Zonge Engineering Pty Ltd under instruction by Pasminco Exploration who are currently exploring the ground for Rosebery style Zn-Pb-Ag-Au mineralisation. The survey was conducted with two main aims. The primary aim of the CSAMT survey was to delineate anomalous conductivity response that could be attributed to alteration and/or direct massive sulphide mineralisation for the purpose of drill target generation at the Beatrice Prospect. A secondary aim was to act as a test case for the application of CSAMT to base-metals exploration in Tasmania. For this reason a significant portion of this report and SUMMARY encompasses technical detail for the purpose of technique evaluation. Various processing and modelling algorithms were applied over the data to determine an optimum interpretation procedure to follow when using CSAMT data.

The CSAMT survey was selected to enable suitable depth penetration to facilitate effective mapping up to 1km below the surface through a resistive quartz-porphyry unit intercalated with moderately to poorly conductive black shale units. The technique is well suited to the rugged terrain of Tasmania due to the system configuration which requires only a single transmitter location point. A requirement of the survey is that the transmitter is located some distance (up to 10km) from the survey area. The transmitter for the Beatrice survey was situated to the south-east of the town of Queenstown approximately 8 km's south from the acquisition grid. The system operates by measuring electrical and magnetic fields at the surface as deviations from a plane-wave electromagnetic field propagating through the earth from the transmitter. The electromagnetic field parameters are measured at progressively lower transmitted frequencies at each station effectively increasing the depth of investigation.

The survey data were of generally good quality with high signal to noise ratios encountered for most frequencies. Data acquired at 256Hz were found to be very noisy in places. It is thought that this noise is induced by powerlines (256Hz is a multiple of the 50Hz frequency of the Tasmania power grid) or by a transition to near-field data at this frequency. Problems are sometimes encountered with CSAMT surveys whereby the transmitter is located too close to the survey area and much of the data frequencies are recorded as "near-field" data. In this situation the information with decreased transmitting frequency no longer becomes diagnostic of increasing penetration depth. The "near-field" notch generally occurs at 256Hz for the Beatrice survey data which is quite acceptable for Tasmanian conditions. Assuming an average overlying resistivity of 100 ohm.m, the effective penetration/investigation depth is computed to be approximately 500m.

Two of the main problems with CSAMT surveys for mineral exploration are in the removal of near-surface electrical in-homogeneity effects (known as statics) and the suitable modelling of data. Poor understanding of these problems has lead to the CSAMT technique often being either discounted as a viable exploration tool or being misinterpreted resulting in ineffectively positioned drill-holes. Processing and inversion techniques applied on the Beatrice data with the aim of addressing these problems are listed below:

- ZONGE TMA static correction
- EMAP algorithm static correction
- 1D inversion of data with and without static correction applied
- 2D inversion of data with and without static correction applied

The main conclusion drawn from the above processes was that no one technique provided the best section upon which a geological interpretation could be made. Each process had advantages and disadvantages.

Display of raw pseudo-section data was advantageous for observing near-surface (<200m) features whilst maintaining maximum lateral resolution. The main disadvantages are that the apparent resistivity values are not absolutely diagnostic of the resistivity of the detected anomaly and depths to features are not quantified. Statics correction of raw data displayed as pseudo-sections are useful for viewing deeper resistivity features through removal of statics effects. Statics effects are introduced through the low frequency component of shallow resistivity features. These often mask the lower frequency response caused by deeper features and must be removed. The TMA technique operates as an averaging filter and has the apparent disadvantage of removal of near-surface narrow wavelength features and also the in-complete removal of statics effects. The EMAP algorithm for statics correction may be regarded as a more robust algorithm physically, however analysis of raw data from the Beatrice examples would suggest the removal of some that are quite apparently real features (possibly due to edge effects of the filter algorithm).

1D inversion of data without first applying statics corrections produced depth-resistivity sections that exhibited quite severe statics effects. Statics removal using the TMA and EMAP algorithms were both found to be effective. The EMAP algorithm shows clear evidence for less statics induced anomalies at depth than those using the TMA filter. 2D inversion of data provides a very smoothly varying depth section that is perhaps not too well represented by the geology. Statics effects are not observed in the 2D inversion results. This is most likely a consequence of the smoothness of the resultant model.

Comparison of pole-dipole induced polarisation (IP) data acquired over the same two lines at the Beatrice Prospect show that the IP data were far more effective in detailed mapping in the 0-300m depth interval. The CSAMT technique seems more suited to mapping bulk resistivity variations and was unable to delineate discrete shale horizons at

shallow depths (0-300m) unlike the IP technique which proved very effective in this task. Analysis of raw pseudo-sections and inversion results showed that the CSAMT data suffered significantly from statics caused by the variably conductive gently folded Itac Creek Shale horizon. The main advantages of the CSAMT technique were not able to be highlighted by acquisition of two survey lines at the Beatrice Prospect. The main advantages are the ability to map down to 1000m (if a significantly large enough system existed at that depth). This ability to delineate targets down to 1000m relies on the absence of significant statics effects. Subtle geological features (eg moderate to low resistivity shales) are not able to be detected to this depth. Statics are usually caused by a variable overburden. At Beatrice the variably thick black shale horizon provided the geological unit causing statics effects. Mapping effectively to 1000m would require a generally resistive host geological sequence. The CSAMT technique would require a very significant conductor to provide anomalous response within a zone of generally high background response. The absence of a quality conductor in the CSAMT results from the two lines acquired at Beatrice is a function of the geology and is by no means a fault of the technique but rather a reflection of the geological conditions. The analysis of variations in the resistivity structure from line to line provide the best means for interpretation of CSAMT sections. Quantification of the host response from line to line enables identification of anomalous responses. At Beatrice, the acquisition of only two lines did not provide the means for a detailed interpretation.

Recommendations are outlined as follows:

- CSAMT is applicable in the Central Volcanic Complex of Tasmania for reasons of ease of survey data acquisition and a requirement for a depth of investigation beyond 300m.
- There is no definitive interpretation procedure that should be followed to enable removal of statics effects from data. The EMAP algorithm is the most effective of the two techniques applied, however, the statics removal was not complete and a clear understanding of what comprises a static is required when interpreting data.
- 2D inversion of CSAMT data is apparently not at stage whereby it can adequately be used to model geological boundaries. The 2D inversion of the Beatrice data produced very smooth models that were not representative of known 2D geology. This may have simply been a consequence of smoothing parameters chosen for the inversion process. As the inversion was conducted by contractors using software not available to Pasminco, there was no control able to be placed into the 2D inversion process. Experience with the ZONGE IP inversion software has shown that default smoothing parameters can be inadequate for mapping sharp 2D geological boundaries in the Beatrice region. It could also be the fact that the sample acquisition frequencies are not close enough to allow resolution of features. It is recommended that acquisition of addition frequency data be investigated.
- IP inversion results were quite clearly superior for the purpose of resolving electro-geological boundaries in the 0-300m depth interval. Application of the IP must be considered as the technique of choice for analysing the 0-300m depth interval at prospects where the geology is similar to that observed at Beatrice.

2. INTRODUCTION

The Beatrice Prospect is situated within EL6/98 approximately 7 km's north of the town of Queenstown in Western Tasmania (Figure 1.). The ground is currently being explored by Pasminco Exploration for its potential to host Rosebery style Zn-Pb-Ag-Au mineralisation within Palaeozoic volcanics and volcaniclastic sediments of the Central Mt Read Volcanics. The region also has potential for Mt Lyell style Cu-Au mineralisation. This report presents results of a controlled source audio magneto-telluric (CSAMT) survey conducted by Zonge Engineering Pty Ltd (Zonge) for Pasminco Exploration during April 1999.

The CSAMT technique is a deep sensing (effectively up to 1000m) electromagnetic geophysical method that produces anomalous response over geological units that have low electrical resistivity (or conversely high conductivity). The technique has application in the Central Volcanic Complex of Western Tasmania in the delineation of discrete conductive zones that may be associated with electrically connected conductive sulphide accumulations within economic Zn-Pb-Cu-Ag-Au deposits. The technique may also assist with delineation of more subtle conductive zones that could be associated with large alteration systems.

One of the aims of the CSAMT survey at Beatrice was to act as a technique evaluation study. Only two lines of data were acquired (800N and 2000N). These data are coincident with drilling information and pole-dipole IP data to allow comparison of results. Ideally it would have been advantageous to acquire additional lines of CSAMT for a detailed comparison, however, budgetary constraints could not permit such a programme. Various processing techniques were applied on the dataset to allow an evaluation of optimum processing parameters to be applied on CSAMT data. It was also intended that the CSAMT data may assist with the interpretation of the IP data on these two lines and possibly delineate anomalous response that could provide focus for drill testing.

3. LOCAL GEOLOGY AND PREVIOUS WORK

This geological summary is extracted directly from a report on pole-dipole results acquired at the Beatrice Prospect, Dauth (1999). The geology is derived predominantly from general discussions and field observations with project geologists.

The Beatrice Prospect comprises a prospective horizon of the Cambrian Mt Read Volcanics at the top of the Central Volcanic Complex (CVC). The CVC comprises predominantly felsic volcanics and volcaniclastics and is typically overlain by a sequence of shales, siltstones and sandstones. It is conceptual that this contact provides a focus for mineralisation either by acting as a fluid trap and favourable geochemical site via the overlying shales, or as the sea-floor position for Koroko style VHMS mineralisation deposited during a period of quiescence. A quartz-feldspar porphyry has intruded possibly as a sill along this contact and is a prominent feature of the local geology (the Mt Sedgewick Porphyry). The Ordovician Owen Conglomerate forms topographic ridges and scree slopes that abut onto the prospective ground. Remnants of eroded Permian sediments as horizontal layered clay/silt/sand beds are also evident in the region.

The simplified local geology comprises a gently folded to steeply dipping north-south striking black shale horizon situated at the contact between overlying porphyry and underlying volcaniclastic and felsic volcanic units. The black shale outcrops along a fault expressed along a present day drainage (Itac Creek) and is interpreted to dip steeply to the west and then gently fold to form an anticline in the west underlying the Mt Sedgewick Porphyry. Minor Pb-Zn mineralisation is observed in outcrop and in drill intersections within the black shale and underlying siliclastics. The two areas with potential for further mineralisation are considered to be the steeply dipping shale in the Itac Creek and the extensions of this shale (and ashes-shales-ignimbrites) that underlie the Mt Sedgewick Porphyry to the West and East of Itac Creek.Exploration to date has focused upon the black shale units that are situated strike parallel with the Itac Creek Fault.

Previous work has been summarised by Denwer (1998) in an unpublished report for Pasminco Exploration. Initial work at the prospect commenced in 1975 with stream sediment sampling and geological mapping. Subsequent work included:

- Establishment of over 40 km's of gridding - 1976-present
- 38 line km's of gradient array IP surveying - 1976
- Additional soil sampling - 1977-78
- Drilling MS1, MS2, and MS3 - 1978
- EIP, DHIP, dipole-dipole, and pole-dipole IP geophysical surveys (SCINTREX) - 1978
- Drilling MS4, and MS5 - 1979
- Ground magnetics, gradient array IP, pole-dipole IP, dipole-dipole IP - 1979
- Fixed loop UTEM - 1989
- Drilling MS06 - 1996
- MMI geochemistry - 1998-99
- Drilling MS07-MS09 and pole-dipole IP- 1998-99

4. SURVEY SPECIFICATIONS

The survey specifications are tabulated below:

Date of Survey:	April 1999
Contractor:	ZONGE Engineering Pty Ltd
Survey Type:	CSAMT
Approx. Line km's:	4 km
Line Spacing:	1200 m
Configuration:	H polarisation
H Field Spacing:	200m
E Field Spacing:	50 m
Receiver:	GDP32
Frequency Range:	8192, 4096, 2048, 1024, 512, 256, 128, 64, 32 Hz
Transmitter:	Zonge 30KW
Transmitter Length:	1.5 km
Transmitter Location:	Approximately 8 km's south of the survey region (-8150mN local grid).
Contract Number:	PASEXP023

Porcelain pots filled with $CuSO_4$ saturated solution were used for E-field receiver dipole electrodes. Aluminium foil lined pits were used as transmitter electrodes at the transmitter electrode positions. Two wire lengths were placed between the transmitter electrode pits to allow lower resistance (particularly required at the higher frequencies). The location of the transmitter electrodes is provided below:

AMGEast	AMGNorth	Local East	Local North	RL_mAHD
381772	5338689	943.87	-8092.65	360
380703	5339219	-245.68	-8208.72	275

A location diagram defining the transmitter position with respect to the survey area is shown in Figure 1. The transmitter wire was oriented parallel with the survey lines. Measurements were made of the electrical field parallel to survey line direction and magnetic field perpendicular to the line direction. This is referred to as E_XH_Y data or the transverse magnetic mode (TM).

Four E-field receiver dipoles were read simultaneously for each H-field measurement. The method of data noise and repeatability control was as follows:

- Two readings are taken at each station.
- If the readings lie within 5% error then an average of the two is taken as the result.
- If the readings lie outside of 5% error, then a third reading is taken. If the error lies within 10%, then an average is taken as the result.
- If the three readings lie outside of 10% error, then a fourth reading is taken. If the error lies within of 15% then the average is taken as the result.

- Five readings is specified as a maximum amount to be recorded taking the average values as final data.

A total of 4 line km's of data were acquired on two separate lines (800N and 2000N). The location of the Beatrice Grid is displayed in the location plan of Figure 1. A total of 5 days were required to acquire the 4 line kilometres (1.5 days of which were setting up and packing away the transmitter), equating to 0.8 km's per day and costing approximately $AUS2000/km.

5. TECHNICAL CONSIDERATIONS

CSAMT is an electromagnetic geophysical method that provides information on the ground electrical properties by mapping both lateral and vertical contrasts in resistivity. The method is commonly used to map sub-surface resistivity variations to depths in-excess of 2km. It has been the experience of the author of this report that the effective depth of exploration with the technique in Western Tasmania is in the order of 1km (this takes into account such factors as the geology, noise envelope, logistical constraints, and the types of targets being sought).

An artificially induced electromagnetic field is produced by a 1-2km long grounded wire bipole powered by a high output transmitter and generator (the ZONGE system uses a 30KVA power source). The transmitter bipole is usually located 3-10km from the survey region in order to provide a uniform plane wave polarised electromagnetic field in the survey region throughout a range of applied frequencies across the transmitter (the frequency range usually applied for mineral exploration is in the range of 0.5 Hz to 32 kHz). A square-wave electric current is injected through the transmitter at each of these frequencies for each measurement point. The frequency of the signal is varied in order to vary the depth of penetration (the lower the frequency the deeper the penetration). The orientation of the transmitter may be perpendicular (E-polarisation) or parallel (H-polarisation) with the survey line direction (where the survey line direction is typically the direction perpendicular to geological strike). The H-polarisation mode is used for the Beatrice survey. Results presented by Kellet et al (1993) describe the E-polarisation method being more effective for delineation of tabular bodies due to the dominance of current gathering effects. Disadvantages of the E-polarisation (and reasons for not using the configuration) are that current gathering may be induced in lithologies lying between the survey area and the transmitter and thus act as a shield to the area of interest. A more significant disadvantage in rugged and densely vegetated terrain (such as Beatrice) is that measurements of the E-field are required to be made perpendicular to the line direction for E-polarisation surveys. This would be extremely costly logistically in the Western Tasmania region.

Measurements were made of the horizontal electrical field (E_x) and magnetic field (H_y) components of the electromagnetic field at the frequency of the applied field at the transmitter. A separate measurement of the phase shift between the E-field and the H-field is also measured. These measurements are used to yield the following diagnostic parameters:

Cagniard Resistivity = $(1/5f) \times |E_x/H_y|^2$ units of ohm.m

Impedance Phase = E Phase - H Phase units of milliradians

These parameters are functions of the ground resistivity, survey configuration and depth. The depth of investigation with the CSAMT technique is a function of the ground resistivity and the frequency of the transmitted electromagnetic field. The lower the frequency the greater the depth of investigation. In electromagnetic surveying the "skin

depth" equation is often used to describe the distance at which the signal is reduced by $1/e$, that is, to 37%.

$$\text{Skin depth} = 500 \times (\text{resistivity/frequency})^{1/2} \text{ (Telford 1991)}$$

It can be shown (Asten 1999) that this equation can be used to derive an "equivalent depth of investigation, D" for the CSAMT technique as:

$$D = 356 \times (\text{resistivity/frequency})^{1/2}$$

Therefore, assuming a lower frequency of 64 Hz and a host resistivity of 2000 ohm.m (quite realistic for the volcanic terrain of the Central Mt Read Volcanics), the depth of investigation may be up to 2km. In order to resolve an anomalous signature we would hope to observe at least three frequencies within the anomaly, hence an effective depth of investigation is better described using 256 Hz, providing effective depth of investigation of 1km. Where the host horizon is more conductive (presence of shales) then this depth may be as shallow as 500m or even less. It should be pointed out that the resistivity used in the "D" equation is the bulk resistivity. Therefore if a highly conductive unit (low resistivity) unit overlies a resistive unit then it is possible that the lower unit may be masked by the overlying conductive unit.

Data are typically plotted as pseudo-sections whereby the Cagniard Resistivity is plotted against the measurement frequency. A feature of many plotted CSAMT pseudo-sections is an appearance of striped vertical anomalies on a background showing a layered appearance of increasing resistivity in the lower frequencies. The vertical anomalies are described as statics effects, and the horizontal layering are near-field effects. These are significant problems in CSAMT survey data and need to be understood to avoid mis-interpretation of data.

Statics

The vertical anomalies extending through many frequencies are often referred to as statics effects and are due to the fact that near surface conductivity features will also have a low frequency component (which can often dominate the amplitude of the low frequency component sourced from deeper conductive sources). Statics anomalies in lower frequencies can be discriminated from actual deep sourced anomalies by the fact that physics demands that the wavelength of anomalies increases with depth of the source. Anomalies caused by statics will not increase in wavelength with frequency since the source of the anomaly is still shallow sourced. A deep conductive source must provide a broad wavelength anomaly.

Two algorithms used to static correct the Beatrice CSAMT data are summarised as follows:

(Information provided by ZONGE Pty Ltd)

The trimmed-moving-average-filter (TMA) estimates near-surface resistivities by averaging apparent resistivities along line at a selected reference frequency (4096Hz). The highest frequency with "clean" data is typically used as the reference frequency. The method then computes the sounding curves that would arise from such a near surface resistivity and uses this to correct the data. The filter is described in more detail in APPENDIX 1.

The electromagnetic array profiling (EMAP) statics correction algorithm is described as a data-adaptive spatial filtering technique that responds to changes in local average resistivity at a given frequency to estimate both effective depth of response and resistivity along a survey path (Torres-Verdin 1992). Essentially the filtering applied on the data is dependent on both the resistivity and the frequency and arguably is more thorough in removal of statics due to the adaptive nature of the filter.

"Near-field effects"

In a CSAMT survey the distance between the transmitter and receiver lines is constrained by the following requirements

- That the distance be close enough that signal to noise characteristics of the data are satisfactory.
- That the distance is large enough that plane-wave assumptions are still valid.

Near the transmitter the field strengths (and hence S:N) is greatest however the plane-wave electromagnetic field assumption is no longer true. At a distance from the transmitter where the electromagnetic field becomes a plane-wave the recorded data is known as "far-field" and is suitable for modelling. The "far-field" distance is approximated by:

$$LF > 3 \times \text{Skin depth}$$
$$\text{where Skin depth} = 500 \times (\text{resistivity/frequency})^{1/2}$$

In the "near-field" zone the Cagniard Apparent resistivity formula over-estimates the actual apparent resistivity and the computed resistivity becomes a function of the transmitter frequency rather than the ground resistivity. "Near-field" data are not suitable for modelling, and when displayed in pseudo-section appear as horizontal lines due to the dependence on frequency rather than geology.

6. PROCESSING AND MODELLING PARAMETERS

A number of processing and inversion techniques were applied on the Beatrice data with the aim of determining the advantages and disadvantages of the different algorithms. Those trialed are listed below:

- ZONGE TMA static correction
- EMAP algorithm static correction
- 1D inversion of data with and without static correction applied
- 2D inversion of data with and without static correction applied
- Bostick inversion

Zonge Engineering Pty Ltd conducted the TMA static correction and all 1D and 2D inversion. 1D and 2D inversion were conducted with Zonge developed software. Michael Asten of Flagstaff Geoconsultants conducted the EMAP statics correction of data.

The 4096 Hz data were used for the TMA statics correction filter. Default model smoothing parameters were used for 1D and 2D modelling. The budget of the project did not allow for modelling tests trialing different model smoothing parameters.

Model parameters for the 1D inversion are outlined below:

```
&SCSINV
Header(1)='From SCSINV v1.22h  Date:14/04/99  Time:13:53:09'
Header(2)='BEATRICE PROSPECT  Line 800 N'
Header(3)='for PASMINCO EXPLORATION LIMITED'
Header(4)='Data from 1_800N.AVG'
SurveyType='Scalar',TxType='Bipole',LengthUnits='m',
TxLength(1)=1195,TxAzimuth(1)=90,TxGridE(1)=349,TxGridN(1)=-8151,
RxLength(1)=50,RxAzimuth(1)=90,
dpWeight=1.00,dxWeight=1.00,dzWeight=2.00,Niteration=10,
```

Model parameters for the 2D inversion are outlined below:

```
&SCS2D
Header(1)='"Model updated by RSCS2D v1.05o  Date:13/04/99  Time:14:48"'
Header(2)='BEATRICE PROSPECT  Line 800 N'
Header(3)='for PASMINCO EXPLORATION LIMITED'
Header(4)='Data from 2D800N.AVG'
StnBeg=-2075.00,StnEnd=-25.00,StnPerDipole=50.00,
SurveyType='Scalar',LengthUnits='m',
DpLength(1)=50.00,DpAzimuth(1)=90.0,
DpLength(2)=50.00,DpAzimuth(2)=0.0,
TxType='Bipole',
TxLength(1)=1195.,TxAzimuth(1)=90.0,TxGridE(1)=349.1,TxGridN(1)=-8150.7,
NSweep=3,NResIter=16,ARerrFloor=5.0,ZPerrFloor=50.0,
UseTM=T,UseTE=F,
ResSmth=1.000,ResdpW=0.100,ResdxW=1.000,ResdzW=1.000,
RMSmod=1.3575E-1,RMSdat=5.1564E-1,
```

The following information on CSAMT smooth model inversion was provided by Zonge Engineering Pty Ltd.

" Smooth model inversion is a robust method for converting CSAMT measurements to models of resistivity versus depth. Observed apparent resistivity and impedance phase data for each station are used to determine the parameters of a layered earth model. Layer thickness are fixed before the inversion starts by calculating source field penetration depths for each frequency. Layer resistivities are given a uniform starting value based on controlled source apparent resistivities. Layer resistivities are adjusted iteratively during inversion until the calculated CSAMT response is as close as possible to observed data, consistent with smoothness constraints. Including smoothness constraints in the inversion limits resistivity variation from layer to layer and produces a model with smoothly varying resistivities. SCSINV, Zonges forward modelling algorithm can include the effects of finite transmitter-receiver separation and a three dimensional source field. Therefore depth of inversion is limited as only "far-field" data can be inverted. Source types include a vertically incident plane wave for natural source modelling and grounded electric bipole or horizontal loop sources for CSAMT modeling. Accurate impedance magnitude and phase values are calculated for all frequencies and transmitter-receiver separations. Impedances can be calculated for scalar, vector, or tensor survey configurations. Lateral variation is determined by inverting successive stations along a survey line to produce a grid of smooth model resistivity. Resistivity values are placed at the midpoint of each layer, forming a column below each station. The columns form an array representing a cross-section of model resistivity. Results from a complete line can be represented in pseudo-section form by contouring model resistivities. Inverting apparent resistivity and impedance phase to smoothly varying model resistivities is an effective way to display the information inherent in CSAMT measurements. Smooth model inversion does not require any prior estimates of model parameters. The data are automatically transformed to resistivity as a function of depth. Models with smoothness constraints are complementary to more detailed models incorporating specific geologic information. "

7. DISCUSSION AND RESULTS

Data are provided as pseudo-sections of Cagniard Resistivity (raw and static corrected), E-field, H-field, phase, and statistical error in Plan 1 and Plan 2 for Line 800N, and 2000N respectively. Pseudo-sections of pole-dipole IP data are also provided in Plan 1 and Plan 2 to allow comparison between data from different techniques. Common colour histogram stretches and contour intervals have been applied to the resistivity data to allow comparison of the statics correction algorithms.

Data Interrogation (it is recommended that Plan 1 and Plan 2 be viewed whilst reading this section)

The TMA static corrected data clearly show evidence that statics effects remain in the data. The EMAP static corrected data do not show evidence of statics remaining in the data. Thus is could be inferred that the EMAP process performed a more thorough removal of statics effects. Both statics correction algorithms result in removal of high frequency features. Discrete anomalies detected at 8192Hz (eg those observed in Line 800 over one dipole at -675E, -525E, and -275E) have been removed in both statics corrected sections. It has been the experience of the author of this report that many of these features are commonly narrow geological units outcropping or just below the surface. The CSAMT can provide good geological information on these units, and statics correction has the undesirable effect of removal of these high frequency features.

Near-field data are encountered at and below 256Hz across most of the survey line. The equivalent depth of investigation at 256Hz assuming an average overlying resistivity of 1000 ohm.m is computed using:

$$D = 356 \times (\text{resistivity}/\text{frequency})^{1/2}$$

such that D = 700m.

Therefore it is assumed that we are investigating approximately 700m with the CSAMT data. The low resistivity layer observed on both lines at 256Hz (most apparent in the EMAP static corrected section) cannot be explained geologically. The impedance phase section clearly shows that the transition to the near-field occurs at 256Hz. This transition is represented by a sharp increase in the Hy field. The sharp increase in the Ex field data is not evident until 128Hz. Therefore since the computed resistivity is proportional to Ex/Hy, the increase in the Hy field at the transition to near-field data explains the low resistivity feature observed at 256Hz. Therefore, only data at frequencies of 512Hz and higher should be given full validity as far-field data. Using 512 Hz in the "equivalent depth" formula yields a depth of investigation of 500m.

The noise sections were able to be produced since more than one reading was taken at every station. Both Hy and Ex data show anomalous noise points. Typically the greatest noise is exhibited at 256Hz. Ex noise is an order of magnitude worse than the Hy noise. The Hy noise does not appear to introduce anomalous response whereas the Ex field noise does (eg -525E at 128-256 Hz and -1525E at 128-256 Hz in Line 800N). Noise

between Ex and Hy cannot be correlated and are observed to occur at different locations and often at different frequency. Three possible causes are postulated, however neither can be proven without further work:

1. The noise is a consequence of instability at the near-field to far-field transition.
2. The noise is due to powerline interference at 50Hz (256Hz is a multiple).
3. the noise was introduced through field procedure or intermittently faulty equipment.

Electromagnetic noise is more severe in data collected on Line 800 than for Line 2000. Data were collected on different days, hence differing atmospheric conditions or slightly different geological conditions may explain the difference in errors. It is perhaps equally likely that the errors could be explained by equipment problems. Noise observed in the Ex field data seem to be most apparent in the impedance phase parameter. The two main anomalous responses in Line 2000N for the phase parameter are at -625E and -1225E at 256 Hz where anomalous noise is recorded for the Ex field data. Noise is not considered a prohibitive problem for the Beatrice survey data but definitely must be taken into account due to the fact that several anomalous responses are apparently due to noise.

Modelling Results

Results of 1D and 2D inversion processes are presented in Plan 3 and Plan 4 for Line 800N and Line 2000N respectively. Resistivity inversion results from pole-dipole IP data have been placed on Plan 3 and Plan 4 to allow comparison between techniques. Modelling results are discussed independently for each line below (it is recommended that the corresponding Plan is viewed whilst reading this section):

LINE 800N (Plan 3)

Inversion results from Line 800N CSAMT data do not significantly change when comparing the 1D inversion with and without the TMA static correction. Application of the EMAP statics correction to the 1D inversion and 2D inversion result in removal of the depth extent of low resistivity anomalies centred on -900E, -1500E, and -1700E. The depth extent of these anomalies depicted in the 1D inversion of the TMA and non-static corrected data are considered to be statics effects and not representative of geology. Several anomalous zones are detected in the data that are thought to be generated by the near to far field transition zone (and the low resistivity layer it causes at 256Hz discussed in the previous section). Anomalies considered to be non-geological and caused by this transition effect are centred on; -1050E, 200mRl; -1375E, 200mRL; and the broad zone on the western end of the line below 400mRL. Originally these may have been thought as prospective deep targets, however closer interrogation of the data determines them to be data acquisition effects.

There appears to be little difference between the 2D inversion section with and without the EMAP statics correction. This is perhaps due to the extremely smooth nature off the 2D inversion. Since statics effects can be removed through smoothing of the section data it is thought that the 2D inversion process effectively achieves this filtering task. This

possibility has not been further tested. The anomalously low resistivity values in the 2D inversion sections at -1000E below 200mRL are interpreted to be edge type effects ("rising sun" effects), and are not considered as trult diagnostic of the geology. It is most likely that variation of these resistivity values would not have significant impact on the validity of the model.

The IP resistivity inversion section (data described in detail by Dauth 1999) quite closely match the CSAMT section data. The CSAMT data would require a very low resistivity layer or large volume low resistivity feature at depth to allow delineation in the data. The fact that the CSAMT data do not exhibit anomalous responses at depth provides information that such a large conductive system is unlikely to be present. Resolution of the Itac Creek Shale horizon at depth has not been achieved with the CSAMT data. This is interpreted to be due to the fact that this horizon does have a large enough volume and low enough resistivity to allow resolution.

LINE 2000N (Plan 4)

Inversion data from Line 2000N closely match the results from Line 800N. 1D inversion using the non-static and TMA static corrected data show evidence of statics induced responses in the depth sections that are not evident in the 1D EMAP and 2D inversion sections. Again the 2D inversion results do not appear to show much difference whether the EMAP statics correction has been applied or not.

An interesting feature of the data is to notice the difference in resolution between the 2D resistivity inversion of IP data and the CSAMT data. The galvanic resistivity data from the IP survey provided a far better resolution of geological boundaries by defining a folded low resistivity layer that is known to represent the Itac Creek Shale horizon. This horizon is represented in the CSAMT data by a very broad low resistivity zone. The IP data were inverted using smoothing parameters that allowed for a more rapid change in resistivity with depth than the CSAMT inversion parameters, hence the comparison is not entirely applicable. It is however thought that the resolving power of the IP data would be superior to the CSAMT given a greater density sample interval within the top 300m of investigation.

Data and inversion results from neither of the two lines provide a high priority drill target for Pb-Zn exploration on the Beatrice Prospect. Secondary targets are provided at the Itac Creek Fault position where black shales are observed in outcrop at -800E on Line 800N and where the shale unit extends close to the surface on Line 2000N at -1400E. Both are shallow (<200m) and are not recommended as drill targets in their own right without support from other exploration methods.

8. RECOMMENDATIONS

Recommendations are outlined as follows:

- CSAMT is applicable in the Central Volcanic Complex of Tasmania for reasons of ease of survey data acquisition and a requirement for a depth of investigation beyond 300m. The cost per km for the CSAMT was $2000 which compared quite favourably to the IP survey cost of $7000/km. However it should be kept in mind that alternative field procedures are being considered for IP surveying that will make it more cost effective. In addition, the proposal to acquire addition frequency content in the CSAMT data would make CSAMT comparable in price with a modified field practice IP survey. IP data have an advantage of acquisition of the polarisation parameter in addition to resistivity.
- There is no definitive interpretation procedure that should be followed to enable removal of statics effects from data. The EMAP algorithm is the most effective of the two techniques applied, however, the statics removal was not complete and a clear understanding of what comprises a static is required when interpreting data.
- 2D inversion of CSAMT data is apparently not at stage whereby it can adequately be used to model geological boundaries. The 2D inversion of the Beatrice data produced very smooth models that were not representative of known 2D geology. This may have simply been a consequence of smoothing parameters chosen for the inversion process. As the inversion was conducted by contractors using software not available to Pasminco, there was no control able to be placed into the 2D inversion process. Experience with the ZONGE IP inversion software has shown that default smoothing parameters can be inadequate for mapping sharp 2D geological boundaries in the Beatrice region. It could also be the fact that the sample acquisition frequencies are not close enough to allow resolution of features. It is recommended that acquisition of addition frequency data be investigated.
- IP inversion results were quite clearly superior for the purpose of resolving electro-geological boundaries in the 0-300m depth interval. Application of the IP must be considered as the technique of choice for analysing the 0-300m depth interval at prospects where the geology is similar to that observed at Beatrice.
- Noise analysis is a very important component of CSAMT data interpretation. E field and H field noise characteristics should be plotted independently to determine the nature of the noise component.
- In future noise analysis should be conducted prior to inversion of data and points considered to be noisy or to exist at the near-field transition should be omitted from the process.
- No direct drill targets have been recommended as a result of the CSAMT results alone.

9. KEYWORDS AND LOCALITY

Keywords

conductivity, CSAMT, disseminated, IP, massive, orebody, pyrite, resistivity, sphalerite, shale, sulphides

Locality

1:100K Sophia 8014

1:250K SK\55-SW Sheet

10. REFERENCES

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Dauth, C., 1999, Modelling and interpretation of induced polarisation data from the Beatrice Prospect, February - March 1999, Internal Report for Pasminco Exploration, Report No. VC 247

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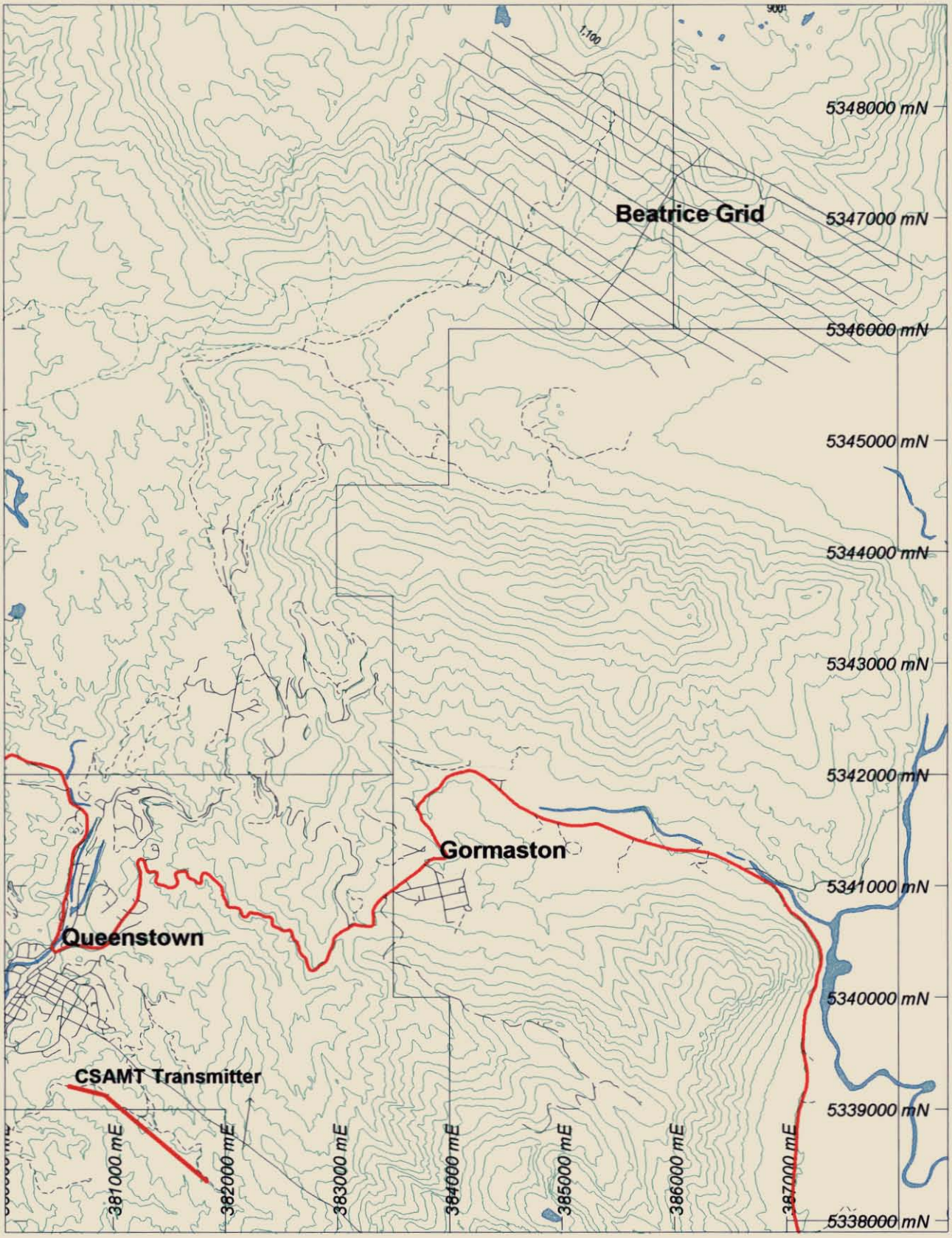
Telford, W. M., et al, 1990, Applied Geophysics, 2nd Ed, Cambridge University Press

Torres-Verdin, C., and Bostick, F. X., 1992, Principles of spatial surface electric field filtering in magnetotellurics: electromagnetic array profiling (EMAP); Geophysics, Vol. 57. No. 4, pp. 603-622



5 cm

SCALE 1:50,000

0 1.25 2.5

Kilometres

Projection: UTM
Datum: AGD84
Zone: 55

PASMINCO EXPLORATION
ETS Melbourne

TASMANIA

Date: August 1999	QUEENSTOWN EL 6/98
Author: C Dauth	BEATRICE PROSPECT
Office: ETS	Location Plan
Ref:	
Scale: 1:50 000	Projection: SUTM55 AGD84 Figure No:

G45417

PLAN 1

645418

00_4444

Annual Report for P/E Granted 1999 - Queenstown Project comprising Watford Peak EL6/98, Beatrice Prospect EL6/98, Darwin EL6/99, Devonport EL24/96, EL

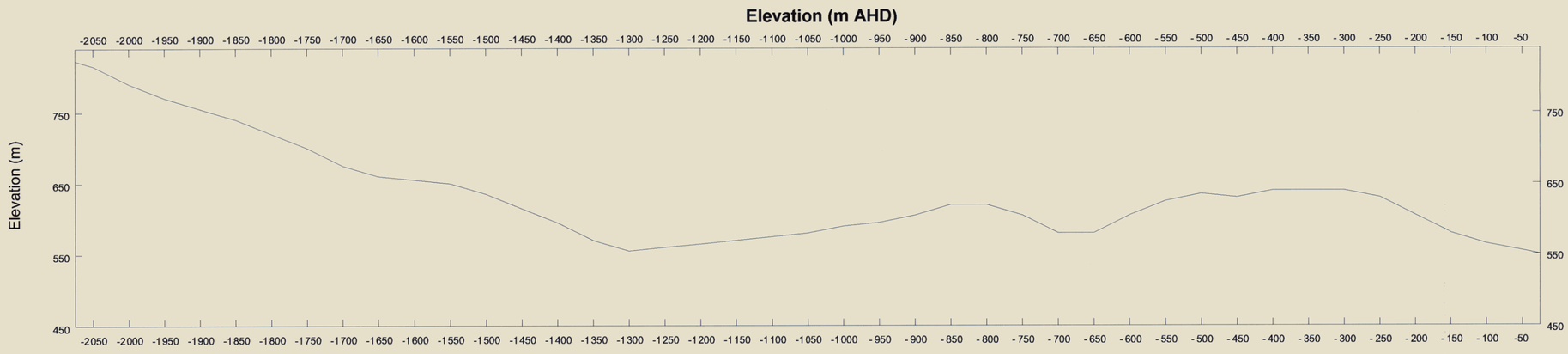
Dauth, C.; Dettmer, K.; McNeil EL20/99, EL24/96

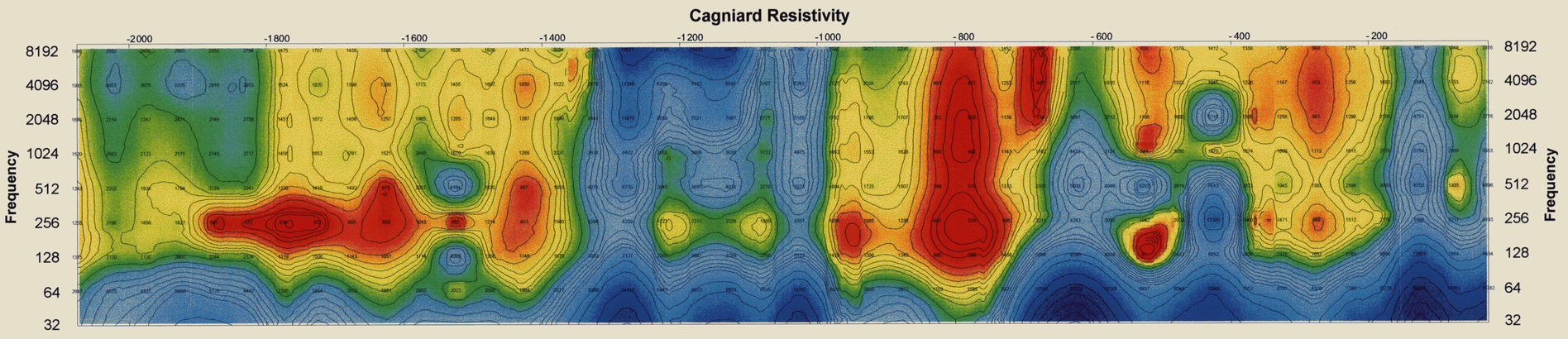
PASMINCO EXPLORATION

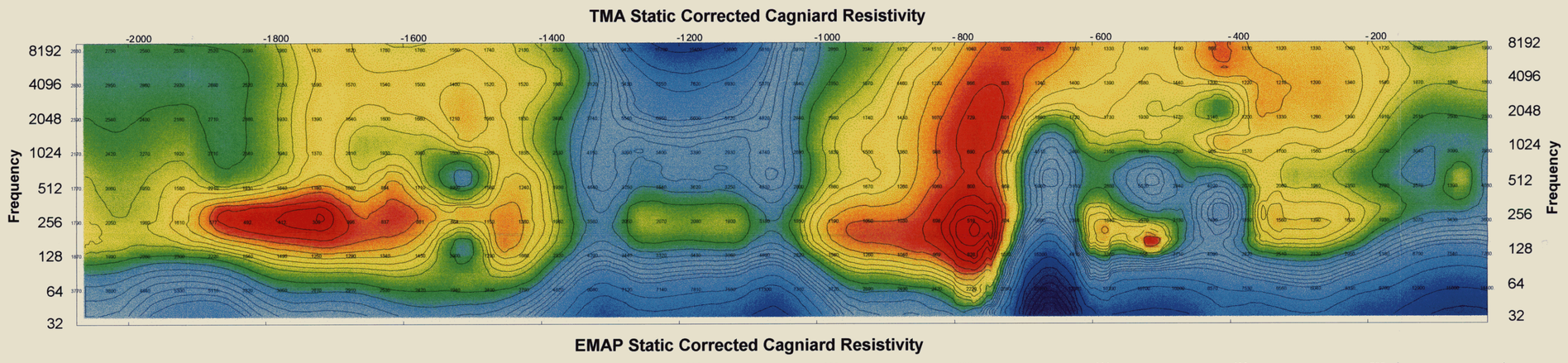
BEATRICE PROSPECT QUEENSTOWN EL6/98 CSAMT and IP Pseudosections LINE 800N

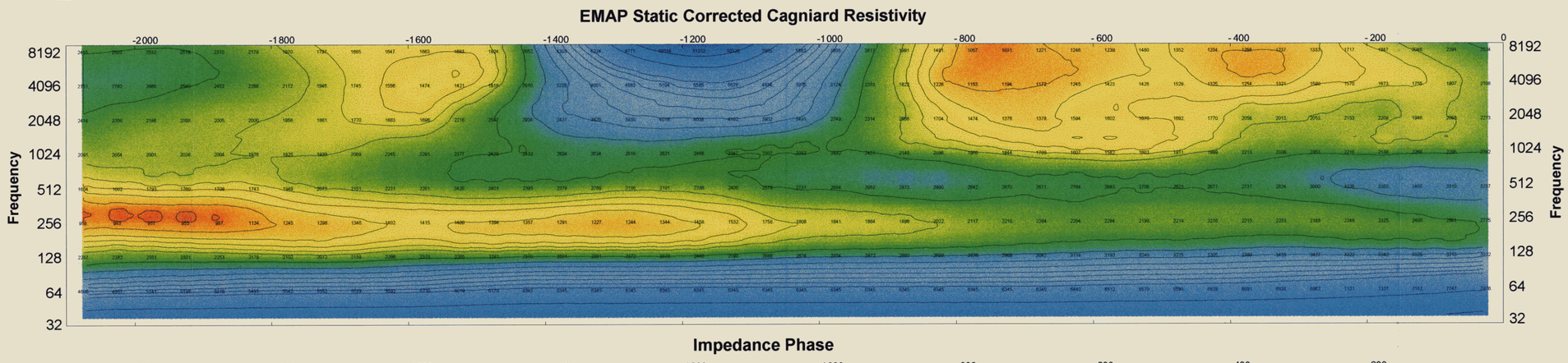
Comparison of TMA and EMAP Static Correction

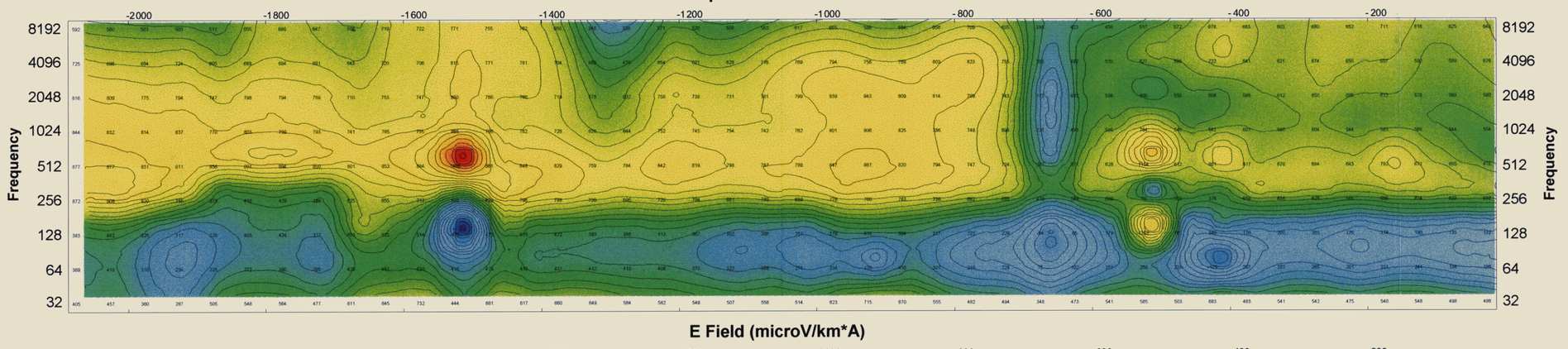
Display of CSAMT noise characteristics

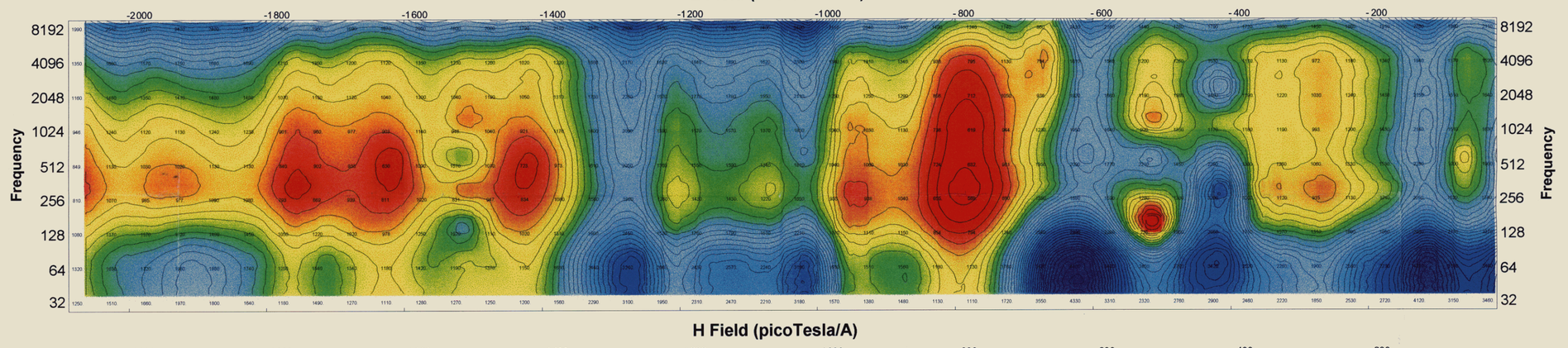


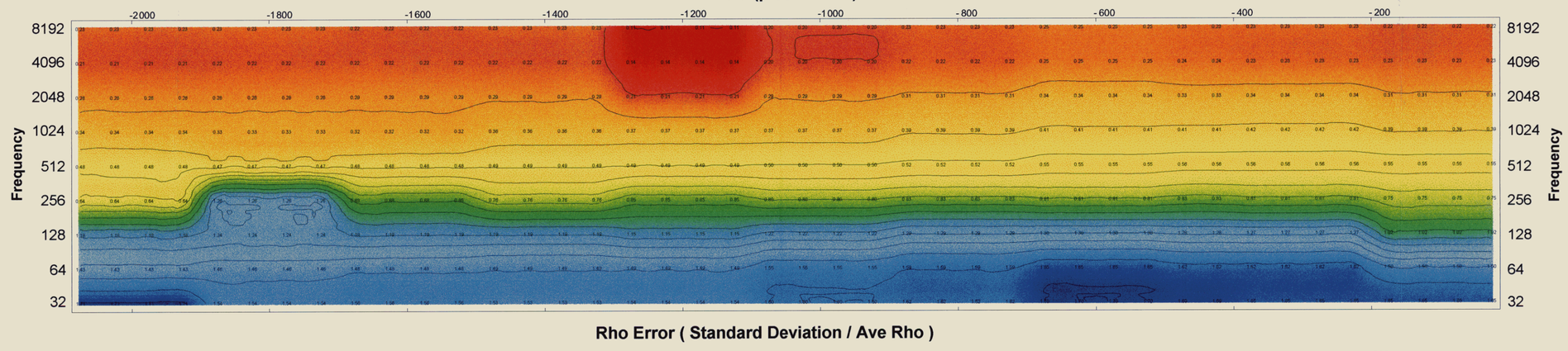


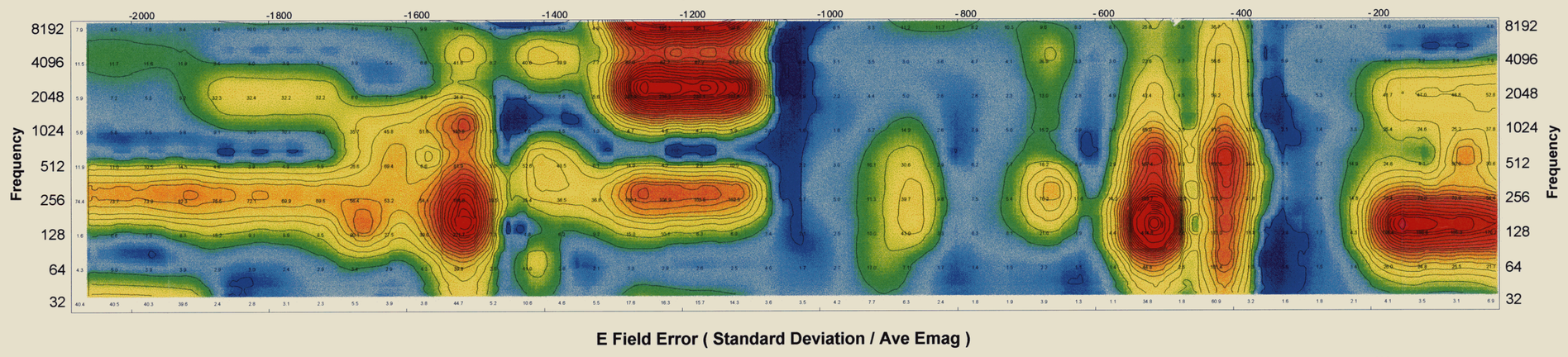


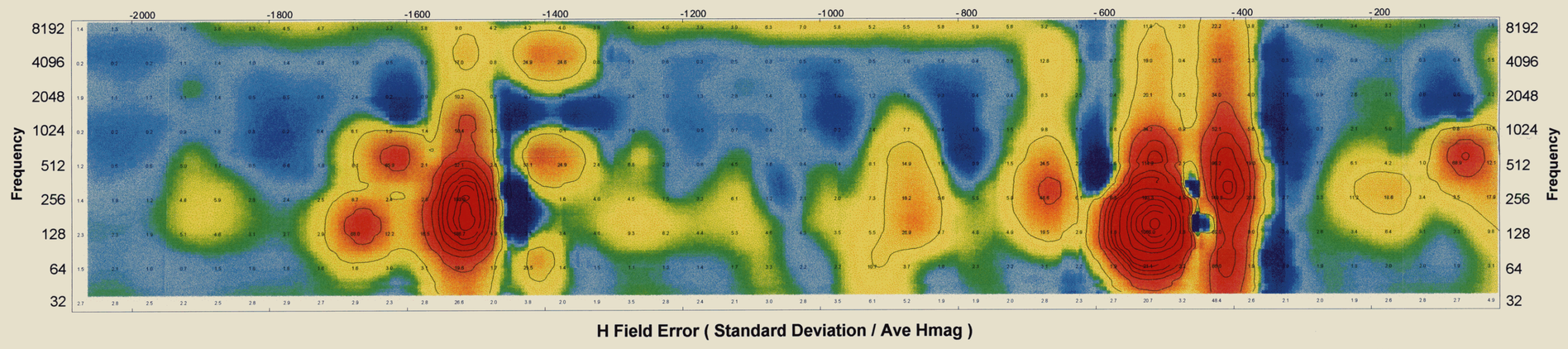


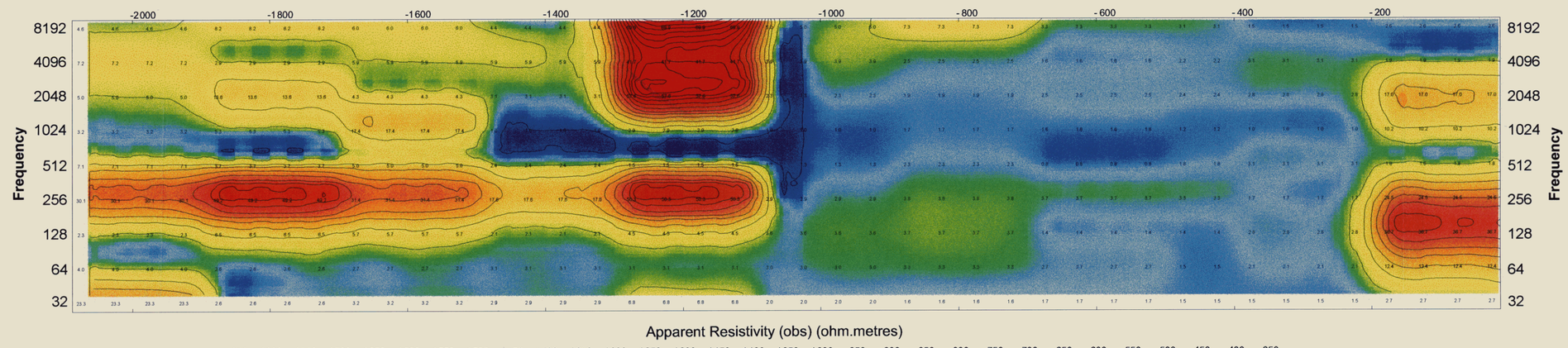










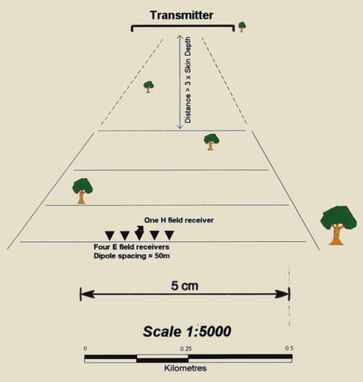


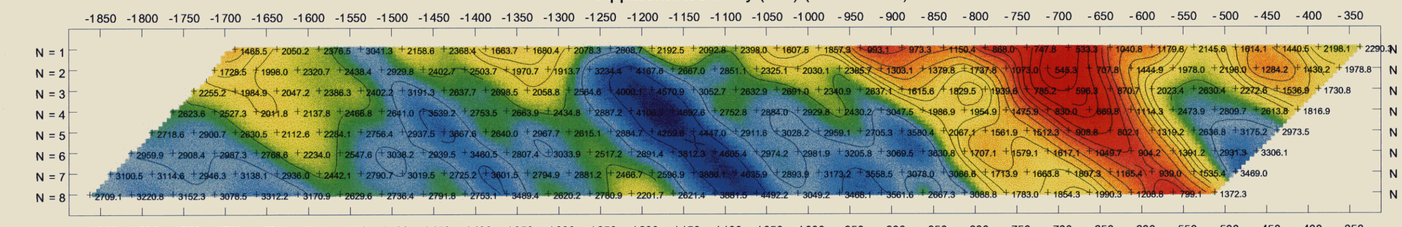
Survey Parameters

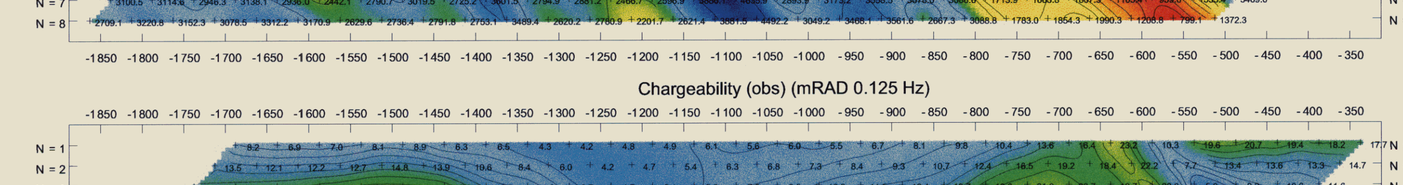
Date of Survey: April 1999
Contractor: ZONGE Engineering Pty Ltd
Survey Type: CSAMT
Configuration: H Polarisation
Frequency Range: 32 - 8192 Hz
Ex Field Spacing: 50 m
Hy Field Spacing: 200m
Receiver: GDP32

Transmitter Parameters

Transmitter: Zonge 30 KW
Length: 1.5 km
Location: 8 km south of survey
Current: Typically 2.5 A



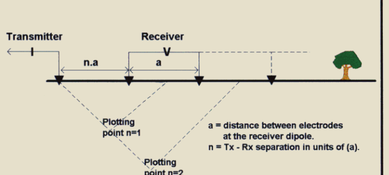




LINE 800N IP Pseudosections

Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CREP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW



Location Plan 1:50,000

Compiled by C Dauth June 1999

PLAN 2

645119

00_4444

Annual Report for PIE October 1999 - Queenstown Interim Resource Project (QIRP) Pasminco Exploration Daum, C.I. Darwent, K. McNeil EL2/0/98, EL24/98, EL

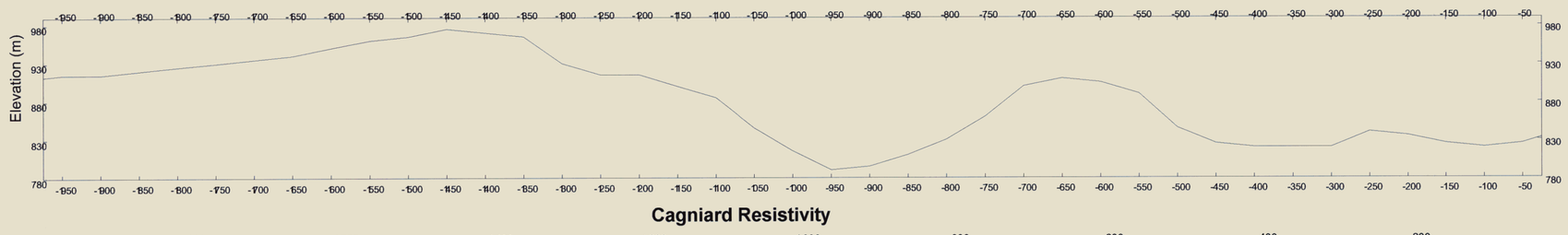
PASMINCO EXPLORATION

BEATRICE PROSPECT QUEENSTOWN EL6/98 CSAMT and IP Pseudosections LINE 2000N

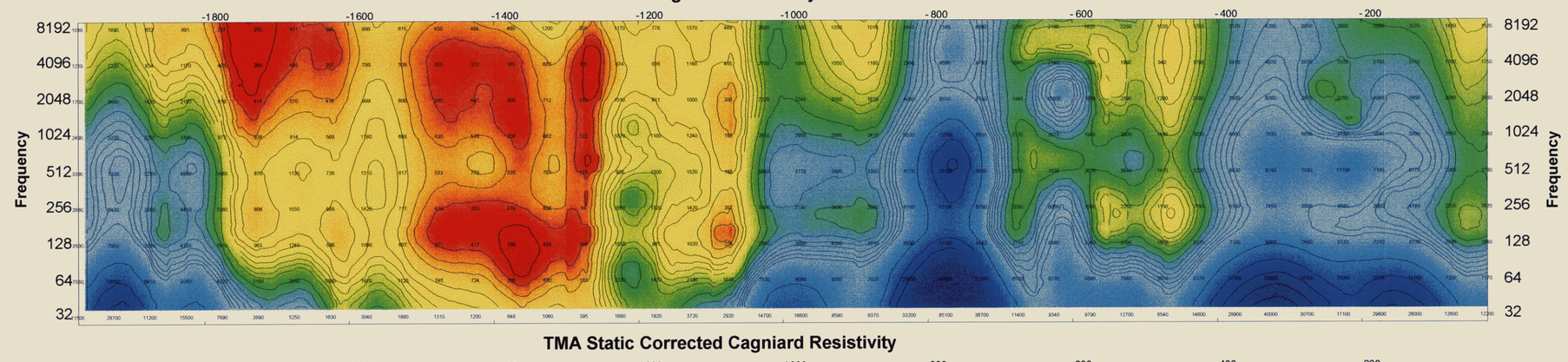
Comparison of TMA and EMAP Static Correction

Display of CSAMT noise characteristics

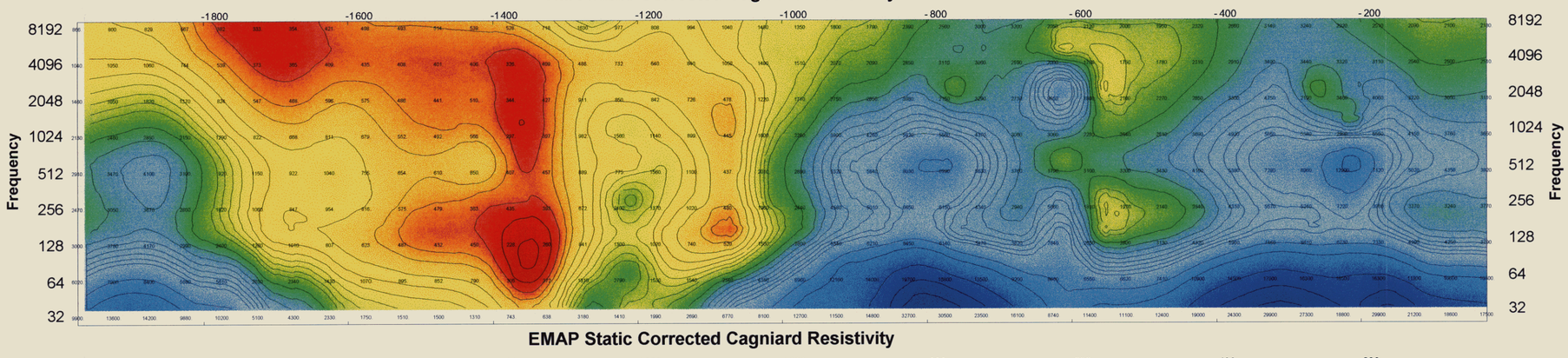
Elevation (m AHD)



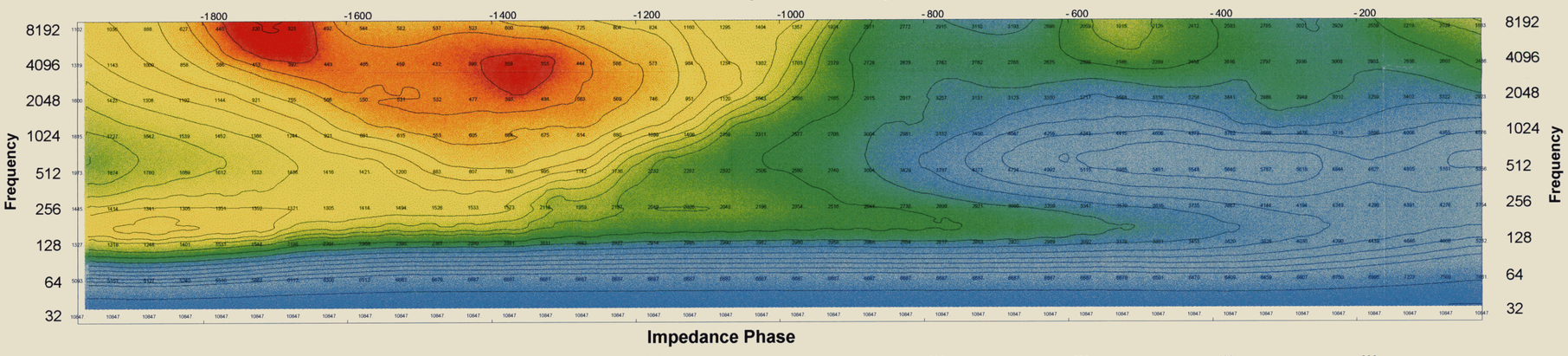
Cagniard Resistivity



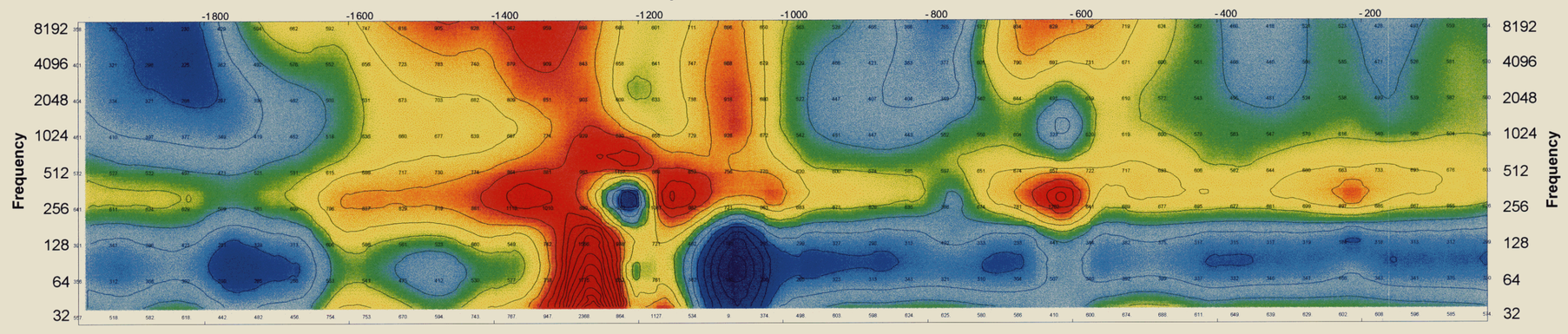
TMA Static Corrected Cagniard Resistivity



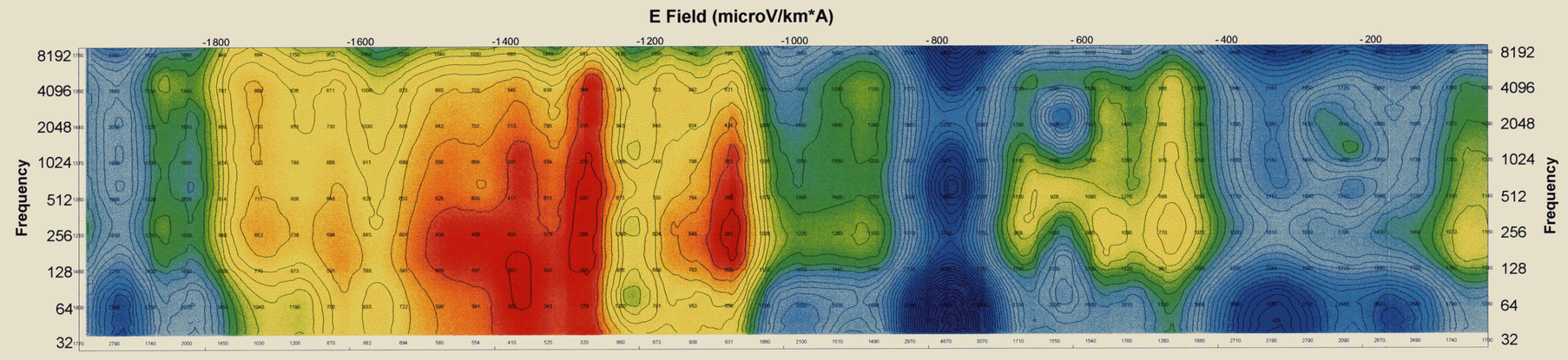
EMAP Static Corrected Cagniard Resistivity



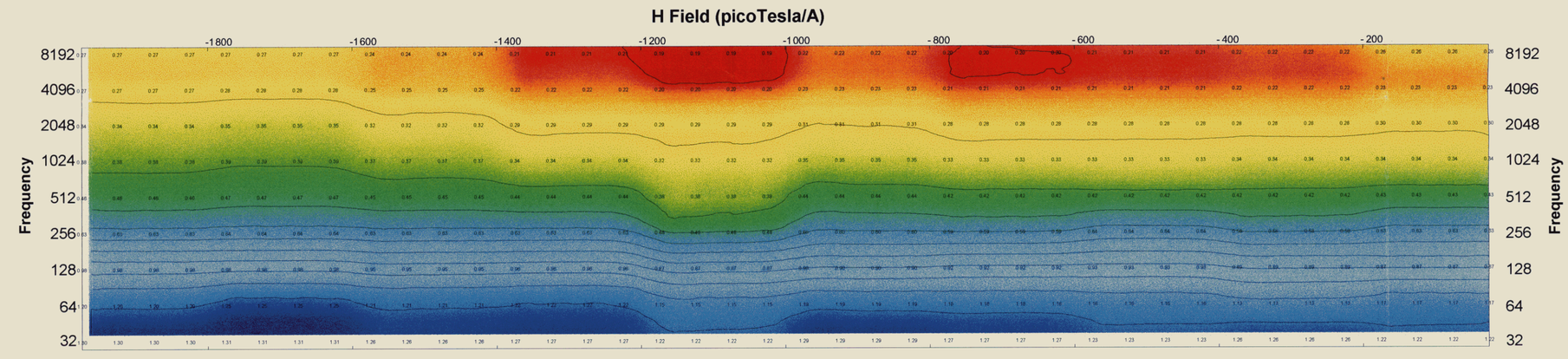
Impedance Phase



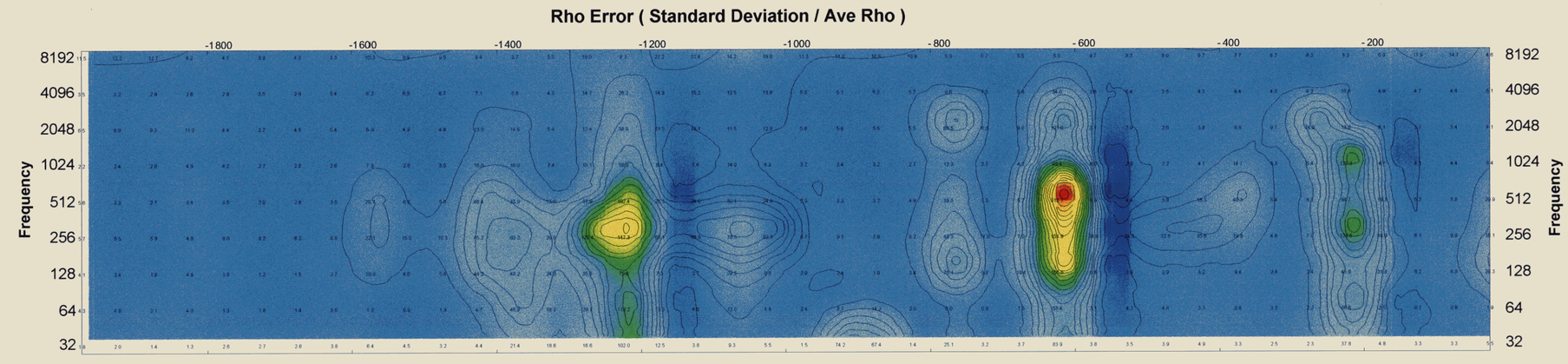
E Field (microV/km*A)



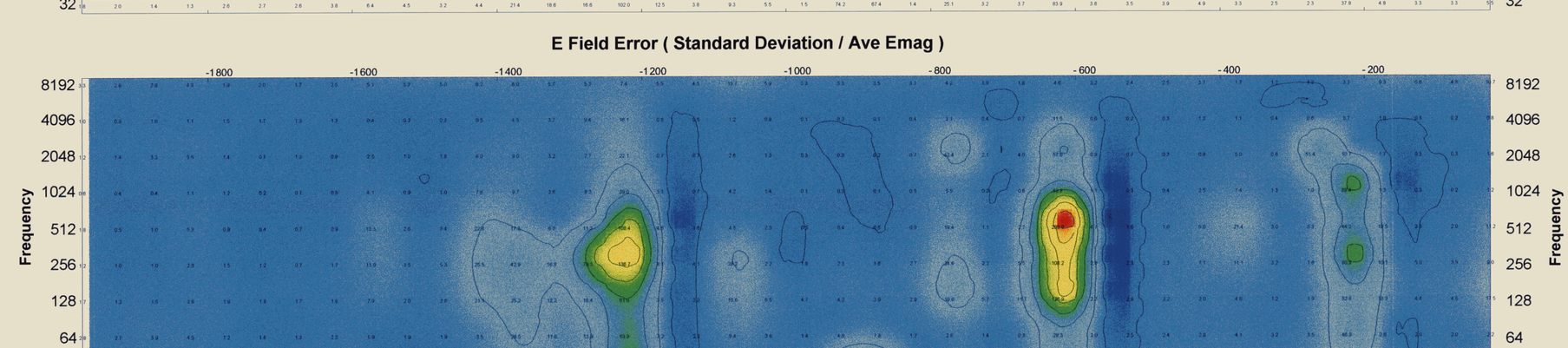
H Field (picoTesla/A)



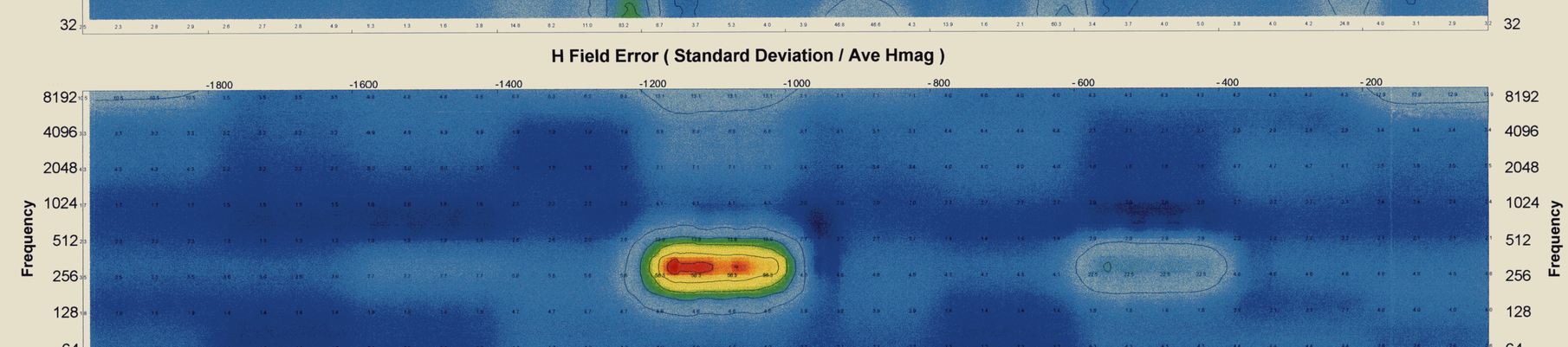
Rho Error (Standard Deviation / Ave Rho)



E Field Error (Standard Deviation / Ave Emag)



H Field Error (Standard Deviation / Ave Hmag)



Survey Parameters

Date of Survey: April 1999
Contractor: ZONGE Engineering Pty Ltd
Survey Type: CSAMT
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Hy Field Spacing: 200m
Receiver: GDP32

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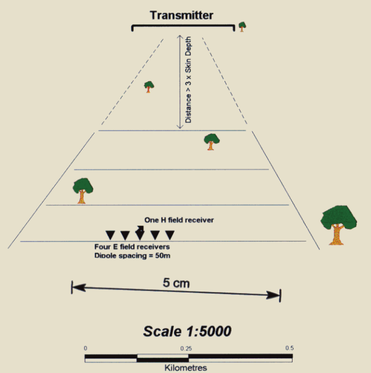
Current: Typically 2.5 A



Scale 1:5000

Kilometres

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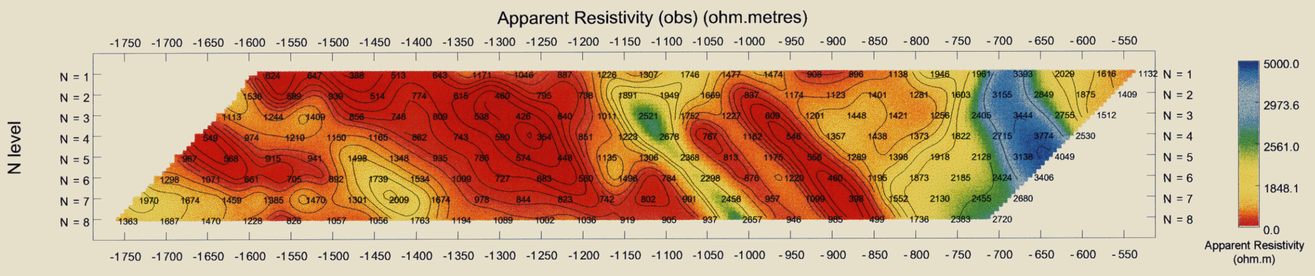
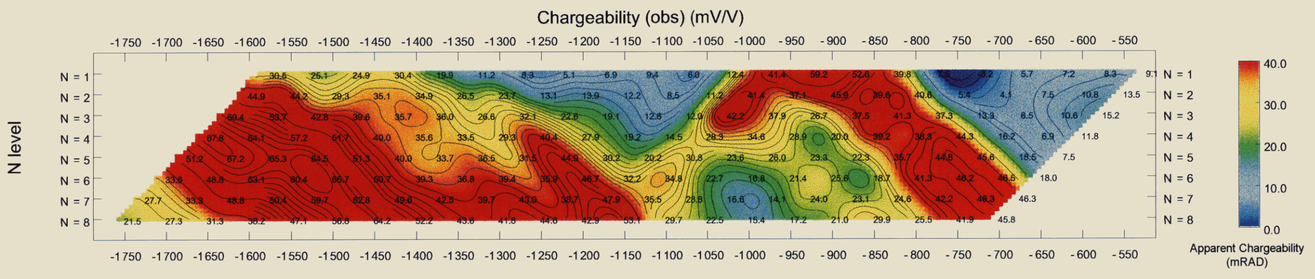
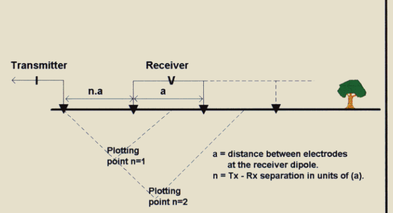


Chargeability (obs) (mV/V)



LINE 2000N IP Pseudosections

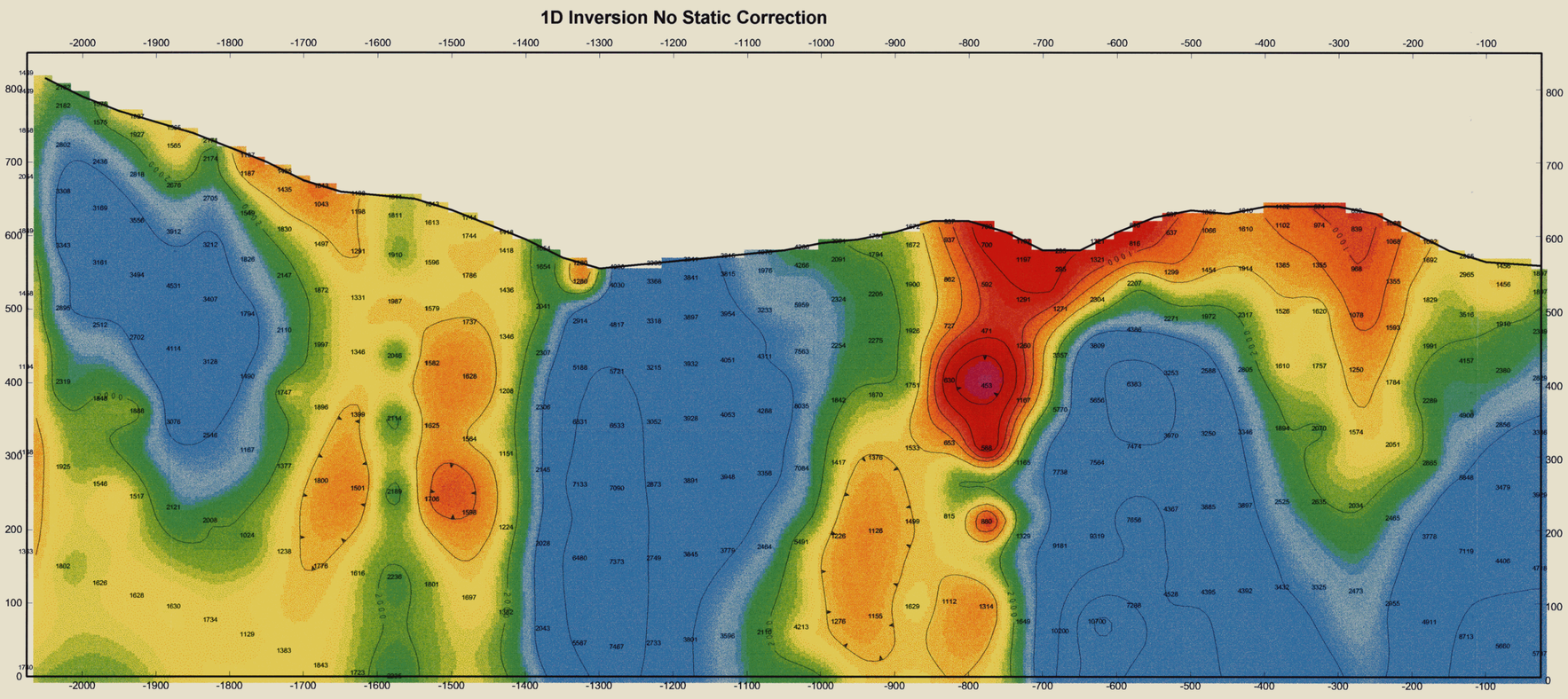


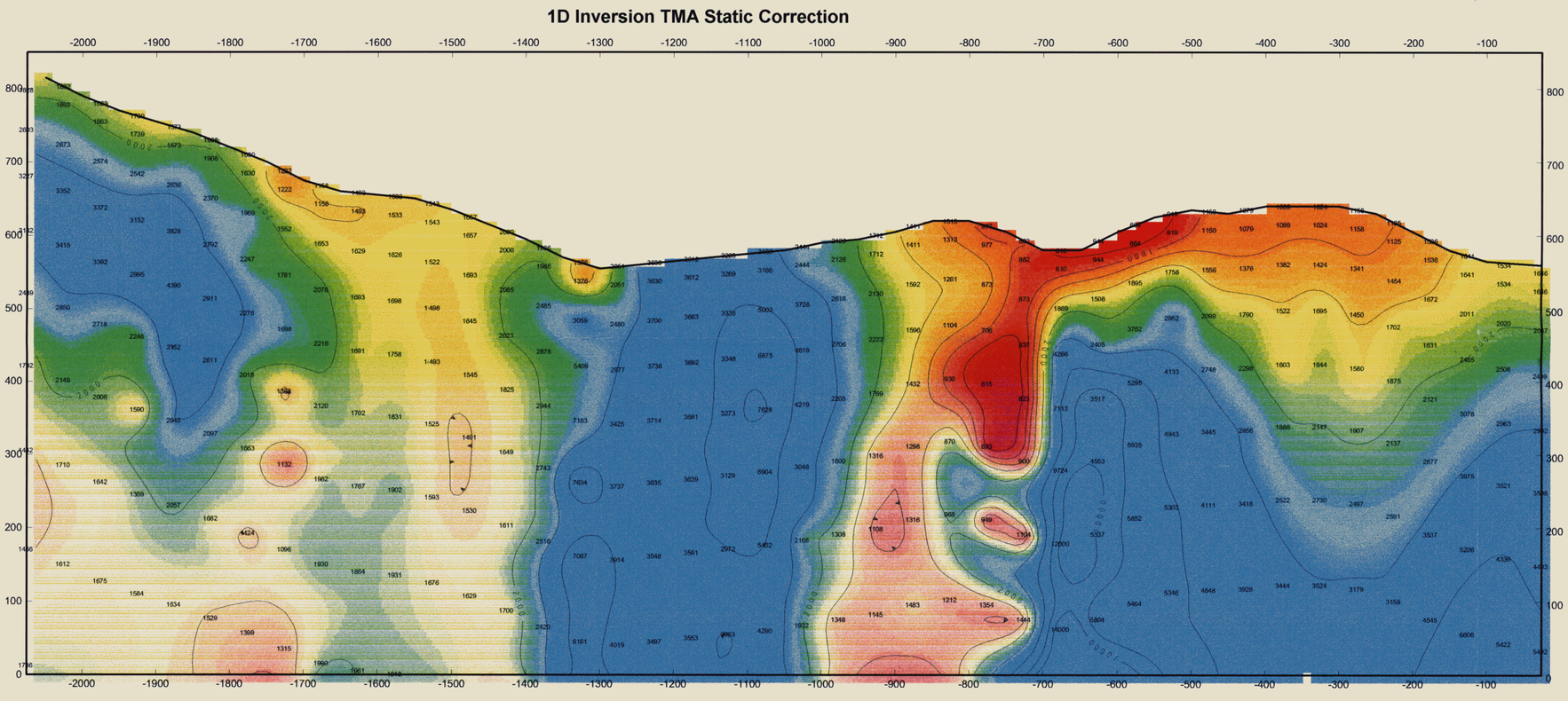
Survey Parameters

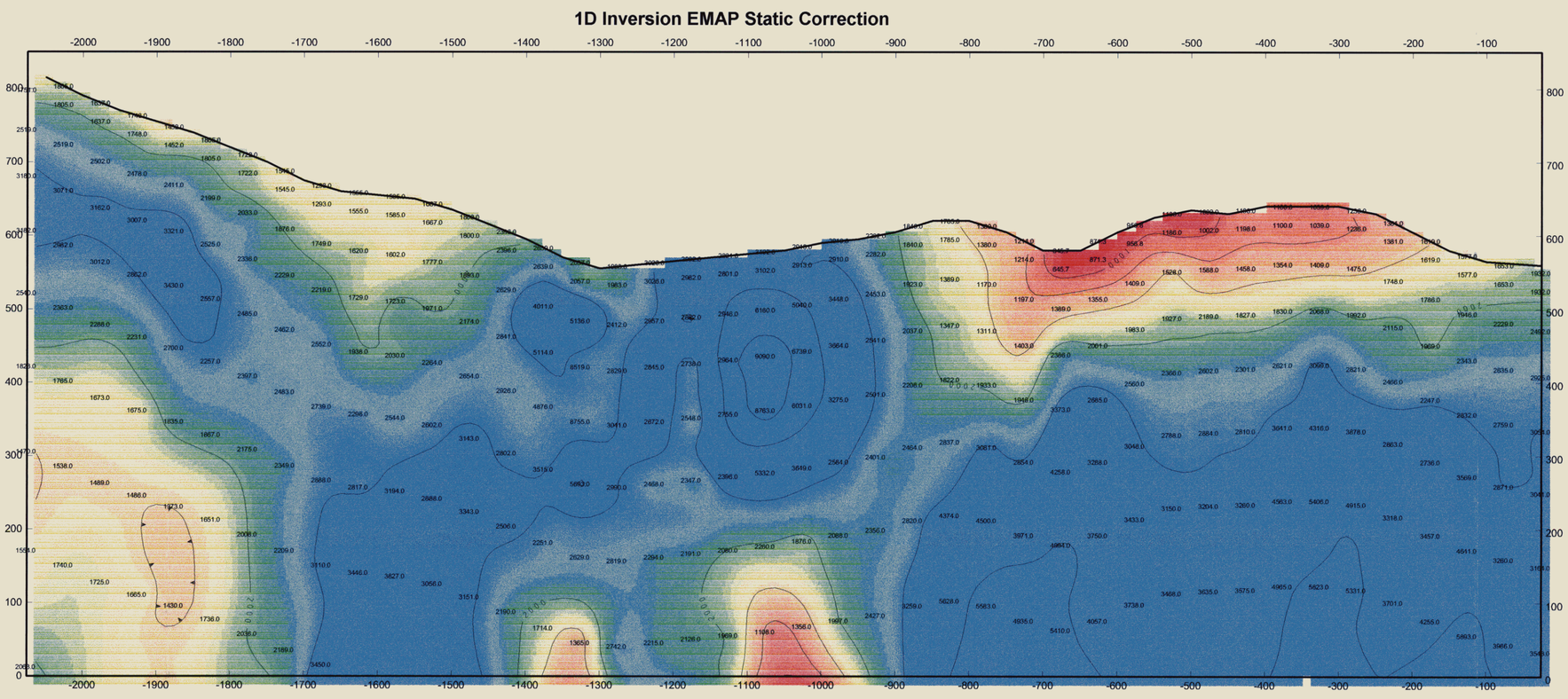
Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

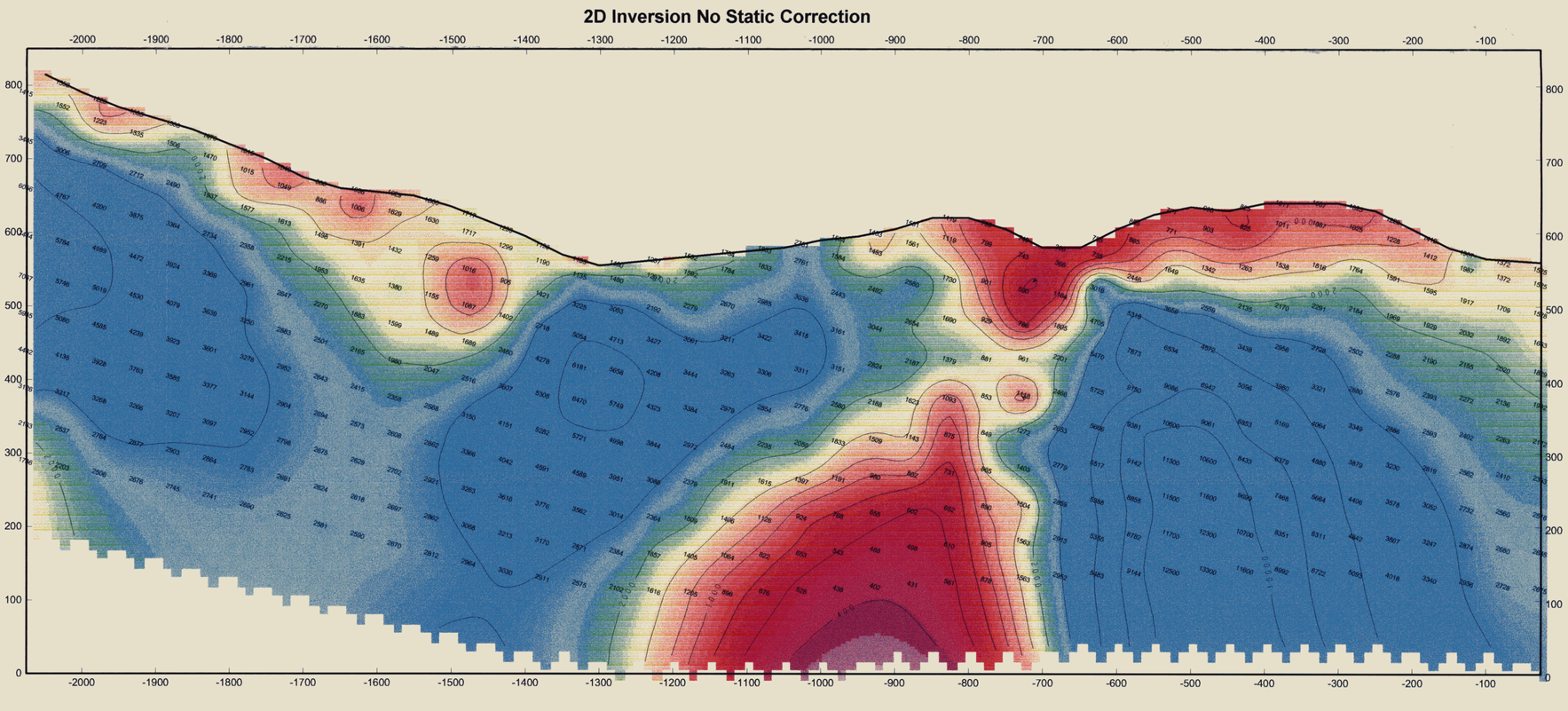
Location Plan 1:50,000

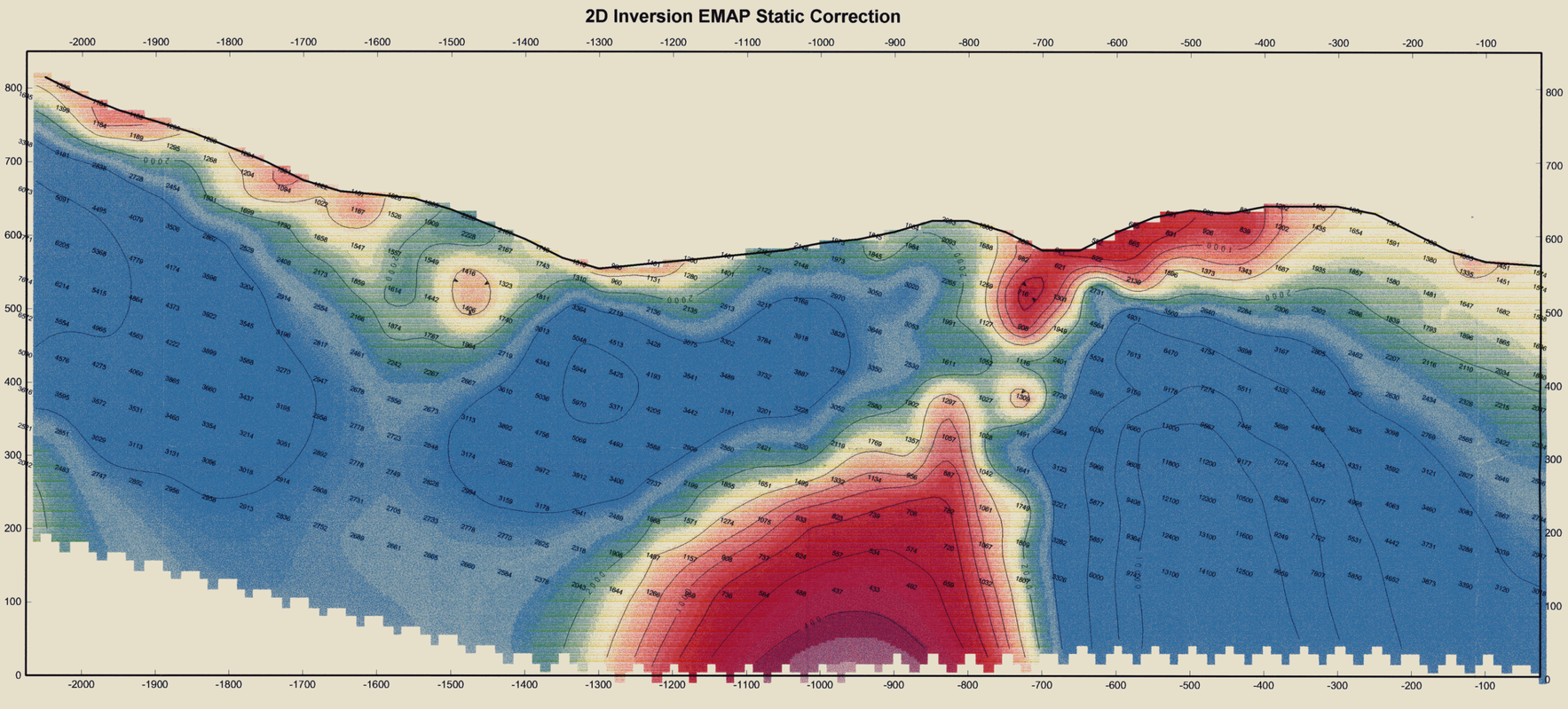
Compiled by C Dauth June 1999

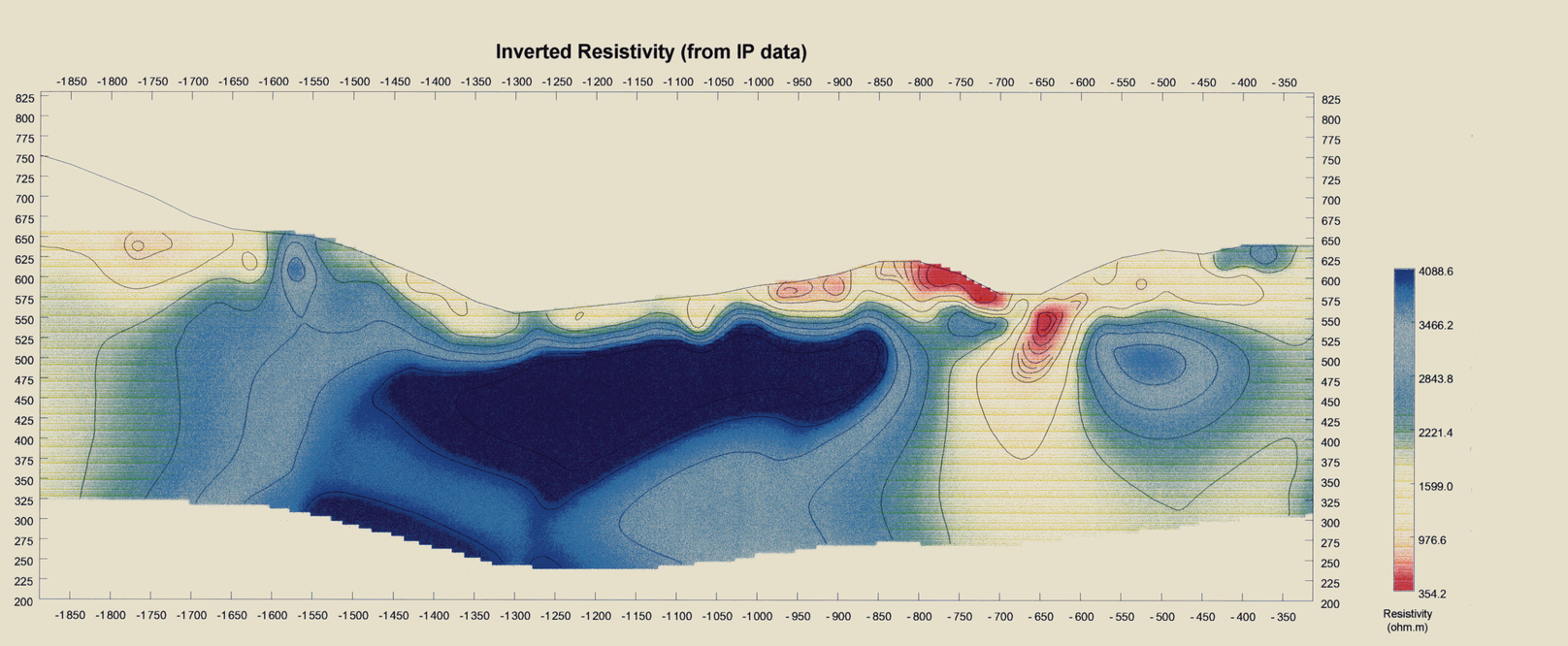












PASMINCO EXPLORATION

BEATRICE PROSPECT QUEENSTOWN EL6/98 CSAMT INVERSION RESLUTS LINE 800N

Comparison of 1D and 2D Inversion Using TMA and EMAP Static Correction

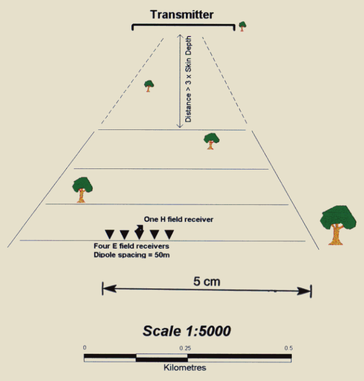
CSAMT SURVEY DETAILS

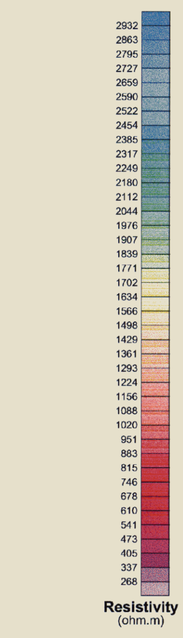
Survey Parameters

Date of Survey: April 1999
Contractor: ZONGE Engineering Pty Ltd
Survey Type: CSAMT
Configuration: H Polarisation
Frequency Range: 32 - 8192 Hz
Ex Field Spacing: 50 m
Hy Field Spacing: 200m
Receiver: GDP32

Transmitter Parameters

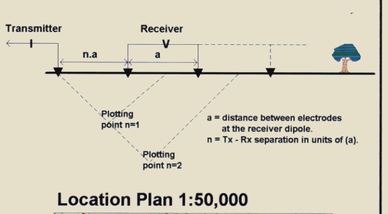
Transmitter: Zonge 30 KW
Length: 1.5 km
Location: 8 km south of survey
Current: Typically 2.5 A





CSAMT Inverted Resistivity
Linear Colour Stretch 200-3000 ohm.m
Contour Interval:
100, 200, 600, 800, 1000,
1200, 1500, 2000, 3000,
5000, 7500, and 10000

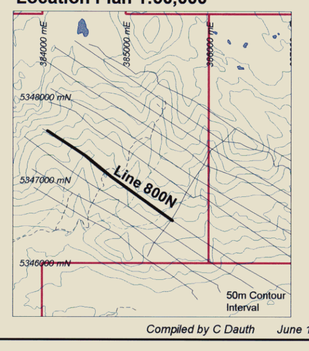
IP SURVEY DETAILS



Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
'n': Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

Location Plan 1:50,000



Compiled by C Dauth June 1999

PASMINCO EXPLORATION

BEATRICE PROSPECT
QUEENSTOWN EL6/98
CSAMT INVERSION RESLUTS
LINE 2000N

Comparison of 1D and 2D Inversion Using TMA and EMAP Static Correction

1D Inversion No Static Correction

1D Inversion TMA Static Correction

1D Inversion EMAP Static Correction

2D Inversion No Static Correction

2D Inversion EMAP Static Correction

Inverted Resistivity (from IP data)

Elevation (m)

Resistivity (ohm.m)

4088.6
1926.9
1434.6
1152.8
918.5
724.3
354.2

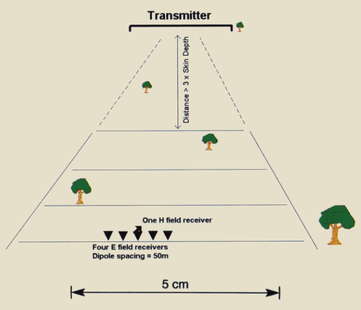
CSAMT SURVEY DETAILS

Survey Parameters

Date of Survey: April 1999
Contractor: ZONGE Engineering Pty Ltd
Survey Type: CSAMT
Configuration: H Polarisation
Frequency Range: 32 - 8192 Hz
Ex Field Spacing: 50 m
Hy Field Spacing: 200m
Receiver: GDP32

Transmitter Parameters

Transmitter: Zonge 30 KW
Length: 1.5 km
Location: 8 km south of survey
Current: Typically 2.5 A

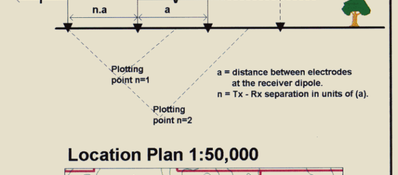


Scale 1:5000
Kilometres

Resistivity (ohm.m)
2932
2863
2796
2727
2659
2590
2522
2454
2385
2317
2249
2180
2112
2044
1976
1907
1839
1771
1702
1634
1566
1498
1429
1361
1293
1224
1156
1088
1020
951
883
815
746
678
610
541
473
405
337
268

CSAMT Inverted Resistivity
Linear Colour Stretch 200-3000 ohm.m
Contour Interval:
100, 200, 600, 800, 1000,
1200, 1500, 2000, 3000,
5000, 7500, and 10000

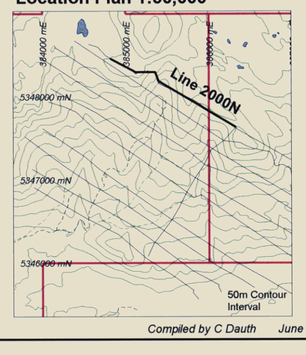
IP SURVEY DETAILS



Survey Parameters

Date of Survey: February - March 1999
Contractor: ZONGE Engineering Pty Ltd
Approx. Line km's: 8.8 km
Line Spacing: 200 m
Configuration: Pole-dipole
IP Mode: CRIP
Dipole Spacing: 50 m
"n" Spacing: 8
Receiver: GDP32
Transmitter: ZONGE 30KW

Location Plan 1:50,000



Compiled by C Dauth June 1999

645422

APPENDIX 8

00_4444C

Interpretation of Downhole Electromagnetic Data on MS7 and MS9 at the Beatrice Prospect - EL 6/98
Pasminco Exploration*
Dauth, C. EL6/98

BEATRICE PROSPECT

Interpretation of Downhole Electromagnetic Data on

MS7 and MS9 at the Beatrice Prospect,

September 1999, C. Dauth

PASMINCO EXPLORATION

MODELLING AND INTERPRETATION OF DOWNHOLE ELECTROMAGNETIC DATA ON MS07 AND MS09 AT THE BEATRICE PROSPECT AUGUST 1999

EL 6/98

Author: Chris Dauth

Date: August 1999

Submitted To: A McNeil

Copies To: Pasminco Exploration, Melbourne

Submitted By:

Accepted By:

Melbourne Report No: VC

645424

CONTENTS

LIST OF FIGURES

APPENDIX I

1. SUMMARY

During August 1999 down-hole electromagnetic data (DHEM) using the CRONE PEM system were acquired on diamond drill-holes MS07 and MS09 at the Beatrice Prospect. The Beatrice Prospect is situated in Western Tasmania within EL 6/98 approximately 7 kilometres north of the town of Queenstown. Outer-Rim Exploration Services were commissioned to complete the DHEM survey for Pasminco Exploration who are currently exploring the ground for Rosebery style Zn-Pb-Ag-Au mineralisation. Data were acquired using the CRONE DHEM time domain electromagnetic system.

The aim of the DHEM survey was to delineate anomalous EM response that could be attributed to massive sulphide mineralisation for the purpose of defining further drill targets in the vicinity of either drill-hole MS07 and/or MS09. It is estimated that the DHEM technique would effectively explore within a 200 metre radius of the current drill-hole position. It must be considered that when reviewing this SUMMARY, and when applying the DHEM technique, that economic sulphide mineralisation may not necessarily provide a recognisable response (eg Hercules, Western Tasmania), and that some geological conditions provide anomalous EM response that is not associated with economic sulphide mineralisation (eg graphitic/pyritic black shales).

DHEM data were acquired in the time-domain using an impulse response (square-wave signal) CRONE PEM system. Data were acquired on 18 separate channels (including the "Primary Field" or PP measurement) on a 10 msec timebase. Three-component data were collected at 10 m intervals for the entire length of the 550m and 387 m drill-holes (MS07 and MS09 respectively). Two transmitter loops were used for logging MS07 to allow for variations in coupling of a conceptual sub-surface conductor. Unfortunately only one transmitter loop was used for logging MS09 for logistical reasons. The survey required helicopter support and impending poor weather conditions only allowed one days surveying on the hole. Rather than collect axial data using two different transmitter loop positions it was decided to acquire cross-component data using the one transmitter loop (this was based upon results from logging MS08 which indicated that the cross-component data were arguably more useful than the axial component).

DHEM data acquired on a nearby drillhole (MS08) in April had delineated a subtle off hole response (previously reported). The report on the interpretation of DHEM data from MS08 recommended logging of MS07 and MS09 to determine whether the response detected in MS08 could be confirmed or disregarded as having potential for being sourced from economic sulphide mineralisation. Off-hole responses were detected in MS07 and MS09. The modelled location of the source of off-hole responses depended on the hole geometry and loop configuration and was unable to be suitably constrained by modelling. Nonetheless it is interpreted that the responses are formational (due to black shales and/or a pepperitic unit at the black shale/porphyry contact). This interpretation is based upon drilling results from MS09, physical property measurements on MS05, MS08 and MS09, induced polarisation data, and reference to geological sections. No drill targets were recommended based upon the DHEM results.

2. INTRODUCTION

The Beatrice Prospect is situated within EL6/98 approximately 7 km's north of the town of Queenstown in Western Tasmania (Figure 1). The ground is currently being explored by Pasminco Exploration for its potential to host Rosebery style Zn-Pb-Ag-Au mineralisation within Palaeozoic volcanics and volcaniclastic sediments of the Central Mt Read Volcanics. The region also has potential for Mt Lyell style Cu-Au mineralisation.

This report presents results of a down-hole electromagnetic (DHEM) survey on diamond drill-holes MS07 and MS09 conducted by Outer Rim Exploration Services for Pasminco Exploration during August 1999. The aim of the DHEM survey was to delineate anomalous conductivity response that would be directly associated with massive sulphide mineralisation, and thus provide a target for further exploratory drilling. Previous DHEM logging conducted on a nearby drillhole (MS08) in April 1999 detected anomalous off-hole EM response. It was intended that results from MS07 and MS09 would assist with interpretation of the source of the response detected in MS08. If the response was confirmed (and shown to be discrete in location) then drill testing would be recommended.

3. LOCAL GEOLOGY AND PREVIOUS WORK

This summary of the geology and previous work is taken from the previous report on DHEM results on MS08 (Dauth 1999).

The Beatrice Prospect comprises a prospective horizon of the Cambrian Mt Read Volcanics at the top of the Central Volcanic Complex (CVC). The CVC comprises predominantly felsic volcanics and volcaniclastics and is typically overlain by a sequence of shales, siltstones, and sandstones (interpreted to be Lower Tyndall Group). It is conceptual that this contact provides a focus for mineralisation either by acting as a fluid trap and favourable geochemical position via the overlying shales, or as the sea-floor position for Koroko style VHMS mineralisation deposited during a period of quiescence. A quartz-feldspar porphyry has intruded possibly as a sill along this contact and is a prominent feature of the local geology (the Mt Sedgewick Porphyry). The Ordovician Owen Conglomerate forms topographic ridges and scree slopes that abut onto the prospective ground. Remnants of eroded Permian sediments as horizontal layered clay/silt/sand beds are also evident in the region.

The simplified local geology comprises a gently folded to steeply dipping north-south striking black shale horizon situated at the contact between overlying porphyry and underlying volcaniclastic and felsic volcanic units. Locally the black shale is intercalated with both the overlying porphyry and the underlying ashy volcanics. The black shale outcrops along a fault expressed as a present day drainage (Itac Creek) and is interpreted to dip steeply to the west and then gently fold to form an anticline in the west underlying the Mt Sedgewick Porphyry. Minor Pb-Zn mineralisation is observed in outcrop and in drill intersections within the black shale and underlying siliclastics. The two areas with potential for further mineralisation are considered to be the steeply dipping shale in the Itac Creek and the extensions of this shale (and ashes-shales-ignimbrites) that underlie the Mt Sedgewick Porphyry to the West and East of Itac Creek.

Exploration to date has focused upon the black shale units that are situated strike parallel with the Itac Creek Fault.

Previous work has been summarised by Denwer (1998) in an unpublished report for Pasminco Exploration. This work is further summarised into point form as follows:

- Stream sediment sampling and geological mapping - 1975
- Establishment of over 40 km's of gridding - 1976-present
- 38 line km's of gradient array IP surveying - 1976
- Additional soil sampling - 1977-78
- Drilling MS1, MS2, and MS3 - 1978
- EIP, DHIP, dipole-dipole, and pole-dipole IP geophysical surveys (SCINTREX) - 1978
- Drilling MS4, and MS5 - 1979
- Ground magnetics, gradient array IP, pole-dipole IP, dipole-dipole IP - 1979
- Fixed loop UTEM - 1989
- Drilling MS06 - 1996
- Drilling and DHEM logging; MS07, MS08, and MS09 - 1998-99

Drillhole MS07 was drilled to 550 m to test two targets (taken from the Pasminco December 1998 monthly report):

1. To test the hypothesis that the mineralisation stratigraphy at Itac Creek of black shale underlain by course volcaniclastics underlain by fine ashy volcaniclastics was repeated below the quartz-feldspar porphyry.
2. At the Itac Creek the mineralised stratigraphy dips into the Itac Creek Fault. Unless this stratigraphy is dragged into the fault then there is no depth potential at Itac Creek. MS07 is planned to drill through the Itac Creek Fault to ascertain if the stratigraphy is rotated into the fault.

Results suggested that there is significant depth potential at Beatrice. A summary log follows:

0-109m Quartz feldspar porphyry
109-232m Black shale
232-254m Quartz feldspar porphyry
254-258m Black shale
258-261m Quartz feldspar porphyry
261-417m Coarse pumiceous volcaniclastic massflows
417-550 Ashy volcaniclastic, minor massflow units

Drill-hole MS8 was completed at 798.7m and targeted at a geochemical anomaly on the prospective Itac Creek stratigraphy beneath the Mt Sedgewick quartz feldspar porphyry. A summary log from the drill-hole follows (taken from the Pasminco April 1999 Internal Monthly Report):

MS08 Summary Log:

From	To	
0.0	191.8	Quartz feldspar porphyry.
191.8	197.8	Volcaniclastic sandstone and shale.
197.8	292.9	Quartz feldspar porphyry.
292.9	306.2	Intercalated black shale and quartz feldspar porphyry
306.2	318.2	Black shale
318.2	344.2	Intercalated black shale and quartz feldspar porphyry (peperitic contacts)
344.2	373.7	Black shale and minor sandstone; major fault zones at 360.1-364m and 371.6-373.7m; Sphalerite-rich mineralisation in lower 2m of unit.
373.7	447.3	Quartz feldspar porphyry. Strongly Sil-Co-Chl±Kfs veined with weak sphalerite>galena minerlaisation.
447.3	583.3	Black shale and minor siltstone/sandstone. Sphalerite> galena Mineralisation from 557 - 583.3m.
583.3	651.6	Quartz feldspar porphyry
651.6	665.4	Ash volcaniclastic and minor volcaniclastic sandstone. Generally 0.5-1.0% sphalerite, but, up to 5% sphalerite in matrix of sandstone units.
665.4	696.5	Volcaniclastic sandstones (pumiceous) with trace sphalerite.

696.5	787.3	Intercalated shale and volcaniclastic ash to sandstone units. Variable Py±Sp>Gn mineralisation; narrow intervals of up to 10% Sp (in sandstone beds) but generally <0.5% Sp.
787.3	798.7	Volcaniclastic sandstone/breccia with Sil+ Kfs/hem alteration. Only trace Py+Cpy.

Drillhole MS09 was drilled to 387 m to test an anomalous chargeability zone detected in a pole-dipole survey reported by Dauth 1999. The hole intersected pepperitic porphyry/shale and underlying shale (explaining the IP anomalism). The shale in MS09 appears slightly more graphitic and pyritic than in previous drillholes. A summary log follows:

0-58m Pepperite
58-234m Black shale
234-387m Porphyry

Physical property measurements on several samples from MS07 indicate that the black shale does not provide an inductive conductivity that would be expected to provide an anomalous EM response. It must however be pointed out that the black shale is unlikely to be homogenous in electrical character and that several discrete measurements would not provide a suitable sample base to describe the electrical properties of the shale as a whole.

Measurements were taken on core samples of MS05, MS08, and MS09 using a simple ohm.meter. Two electrodes of rectangular metal (1.3 x 2.75 cm) were separated by 9 cm and connected to the uncut core using a solution of NaCl (approximately 10,000 mg/l). These measurements were designed to test the electrical properties of the core as a bulk sense (since single measurements are unlikely to be diagnostic of the entire rock volume). Resistances were measured at 1-4 m interval down the core and are plotted in Figure 3 to Figure 5. Results indicate that the pepperite unit overlying the black shale in MS09 is most likely the more conductive of all units intersected in any of the holes. The black shale in MS05 and underlying the pepperite in MS09 is also more conductive than the black shale unit intersected in MS08 (which returned more favourable mineralisation). This has important implications in the way we view the electrical data acquired at the Beatrice Prospect. These implications are summarised below:

1. The black shale varies in electrical properties and may in places provide anomalous electrical response.
2. The pepperite unit overlying the black shale may also produce anomalous electrical response in places.
3. Anomalous electrical geophysical response at the Beatrice Prospect are highly likely to be attributable to formational sources.

4. SURVEY SPECIFICATIONS

The survey conducted by Outer Rim Exploration Services using the CRONE PEM system.

The survey specifications are tabulated below:

Date of Survey:	August 1999
Contractor:	Outer Rim Exploration Services
Survey Type:	DHEM
System:	CRONE PEM
No. of Drillholes:	2 (MS07 and MS09)
Components:	Axial (A) and cross-components (U and V)
Station Spacing:	10m (A, U, and V)
Time Base:	10 msec
Channels:	18 including the PP field
Ramp Time:	500 μsec
Synchronisation:	Cable
Transmitter Size:	400m x 300m and 600m x 400m
Current:	7A and 20A Amps

The method of data noise and repeatability control was as follows:

- Two readings were taken at every station and compared for repeatability. Additional readings were taken as required.

Two transmitter loop positions were utilised for MS07 and one loop position for MS09. For reference within the text of this report these loops have been labelled BEM1, BEM3, and BEM4 (transmitter loop BEM2 was not utilised for this survey). The location of transmitter loops is presented in Figure 2. Transmitter loop corner coordinates (local and AMG) are provided below:

Loop	Corner	Local East	Local North	AMG East	AMG North	RL
BEM1	NW	-1700	2200	385020	5348712	990
BEM1	NE	-1350	2200	385310	5348546	1045
BEM1	SE	-1100	1600	385161	5347919	820
BEM1	SW	-1650	1600	384718	5348205	870
BEM2	NW	-1350	2200	385310	5348546	1045
BEM2	NE	-950	2200	385632	5348347	910
BEM2	SE	-800	1600	385414	5347766	740
BEM2	SW	-1100	1600	385161	5347919	820
BEM3	NW	-1600	1225	385060	5347985	815
BEM3	NE	-1600	800	385410	5347770	740
BEM3	SE	-1200	1200	384830	5347650	670
BEM3	SW	-1200	850	385120	5347475	680
BEM4	NW	-1600	800	385410	5347770	740
BEM4	NE	-1600	500	385655	5347610	830
BEM4	SE	-1200	500	385470	5347300	710
BEM4	SW	-1200	850	385120	5347475	680

Drill-hole collar and survey details are provided below:

MS07
Collar 385088mE, 5347510mN, 706mRL, Depth 550m

Hole	Depth	Magnetic Azimuth	AMG Azimuth	Dip
MS7	0	48	60	-60
MS7	62	51	63	-61
MS7	122.2	53	65	-60.5
MS7	176	54.5	66.5	-57
MS7	239	53	65	-56
MS7	308	54	66	-55.5
MS7	371	55	67	-55
MS7	427	54	66	-54
MS7	506	56	68	-53
MS7	550	57	69	-52

MS09
Collar 385110mE, 5348260mN, 955mRL, Depth 387.5m

Hole	Depth	Magnetic Azimuth	AMG Azimuth	Dip
MS9	0	278	290	65
MS9	31	278	290	64.5
MS9	62	278	290	64
MS9	100	274	286	64
MS9	152	274	286	64
MS9	199.8	272	284	64
MS9	251	275	287	64
MS9	305	278	290	63.75
MS9	353	278	290	63.5

Time gates utilised by the CRONE PEM system are tabulated below (msec after ramp cessation):
NB. The contractor report (APPENDIX I) uses a system whereby the number 1 channel is the channel that follows the PP channel.

CHANNEL	DELAY	WIDTH
1 (PP)	-0.198	0.1
2	0.05625	0.01349
3	0.07425	0.02251
4	0.09900	0.02700
5	0.13280	0.04060
6	0.17790	0.04960
7	0.23635	0.06730
8	0.31500	0.09000
9	0.42075	0.12150
10	0.56020	0.15740
11	0.74470	0.21160
12	0.98975	0.27850

13	1.31350	0.36900
14	1.74550	0.49500
15	2.31950	0.65300
16	3.08000	0.86800
17	4.09000	1.15200
18	5.42900	1.52600

5. MODELLING PARAMETERS

Data were modelled using the FILAMENT modeling software invoked through the EMVISION EM modelling and visualisation package. The FILAMENT software is capable of inversion of results to provide minimum error between observed and modelled data, however computer inversion can have the undesirable outcome of producing non-geologically feasible results due to the non-uniqueness of solution. This is particularly the case whereby DHEM response is made complicated through superposition of response from multiple sources. It is for this reason that the software was used only in the forward modeling mode for modelling MS07 and MS09.

6. DISCUSSION AND RESULTS

Stacked profiles of the down-hole response are presented in the contractors report as APPENDIX I. Results from each drill-hole and loop are discussed separately and then summarised.

MS07

BEM 3

Axial data from BEM3 show anomalous EM response as a late-time (channel 7-12) broad low with sharp shoulders from 100 m to 320 m down-hole. Early time channels (1-7) show a positive response over this interval. Cross-component results similarly show anomalous response across this interval. This depth range corresponds with intersected black shale in the drill-hole and the response is interpreted to be formational. High amplitude response at the top of the hole is due to the fact the receiver is most likely overloading since the transmitter loop edge passes within 10 m of the hole collar. In addition a large steel platform (a loop of dimension 5 x 5 m used to transport the drill rig) was situated at the loop collar and would no doubt influence the DHEM response to about 100 m or so down-hole.

BEM 4

Transmitter loop BEM 4 was designed to couple with a vertical to steeply easterly dipping conductor within the Itac Creek Fault. Results are similar to those achieved using the BEM 3 transmitter (ie a response shoulder is detected at 320 m down-hole that provides evidence for a formational response and high amplitude responses detected at the top of the hole due to loop location and culture near the collar position). The cross-component data (X and Y in the APPENDIX I) show positive to negative crossover centred at 160 m down-hole in the X component and a broad positive Y component centred at approximately 260 m down-hole. An attempt was made to model this response. One suitable model was a ring current filament source centred at the following coordinates:

385150 mE
5347800 mN
460 mRL
Radius = 120 m
Azimuth = 70°
Dip = 68° to the east

This is very similar to MODEL 2 conductor described in Dauth 1999 as observed in DHEM data from MS08. This area is coincident with a low resistivity zone detected in historical gradient array IP data. The conductor position is coincident with a black shale position and is not considered a viable drill target on this basis. It must also be pointed out that this model is by no means a unique solution.

MS09

BEM 1

Drill-hole MS09 was logged using transmitter loop BEM 1. There are clearly long wavelength off-hole EM responses in the data centred at about 180 m down-hole. These are most likely to be formational responses (black shale/pepperite). Computer modelling was unable to provide a confident position for the location of the conductive source and it is thought that the actual geology is too complex for use of the simplistic EM models available with current software. More time could be spent to define the location of the conductive source however this would simply by an academic pursuit since the response is thought to be formational.

MODELLING RESULTS

Attempts to model the location of the conductive source causing the observed EM response have been at best ambiguous. It was very difficult to reconcile the differences in the three components for each hole and suitable simple geometrical models to explain the observed responses were not achieved. Consequently no profile results from modelling are presented within this report. It is currently thought that the complex folded geology comprising variably conductive black shale and pepperite has provided multiple sources for inductive and current gathering EM responses that are unable to be separated. Best estimates as to the location of conductive sources is possible and in all cases it appears that these locations correspond with black shale stratigraphy.

7. RECOMMENDATIONS

- No drill targets are recommended based upon the DHEM results from MS07 and MS09.
- The DHEM logging did confirm the presence of EM conductive responses as reported when MS08 was logged. These responses are currently thought to be formational.
- It has become apparent that the Beatrice area comprises geological units that give rise to anomalous EM response that could easily be targeted as a conductive sulphide body. Similarly it would also be possible to discount an EM response as formational when in fact the response could be due to sulphide mineralisation. Further DHEM logging at Beatrice is recommended on the basis that an orebody response could well be significantly more conductive than the observed formational responses and thus allow easy identification, however, it must be pointed out that the technique is by no means a sterilisation method since the EM response from a poorly conducting mineralised system (sphalerite rich) might be masked by the background response.

8. KEYWORDS AND LOCALITY

Keywords

conductivity, down-hole, electromagnetics, orebody, pyrite, sphalerite, shale, sulphides

Locality

1:100K Sophia 8014

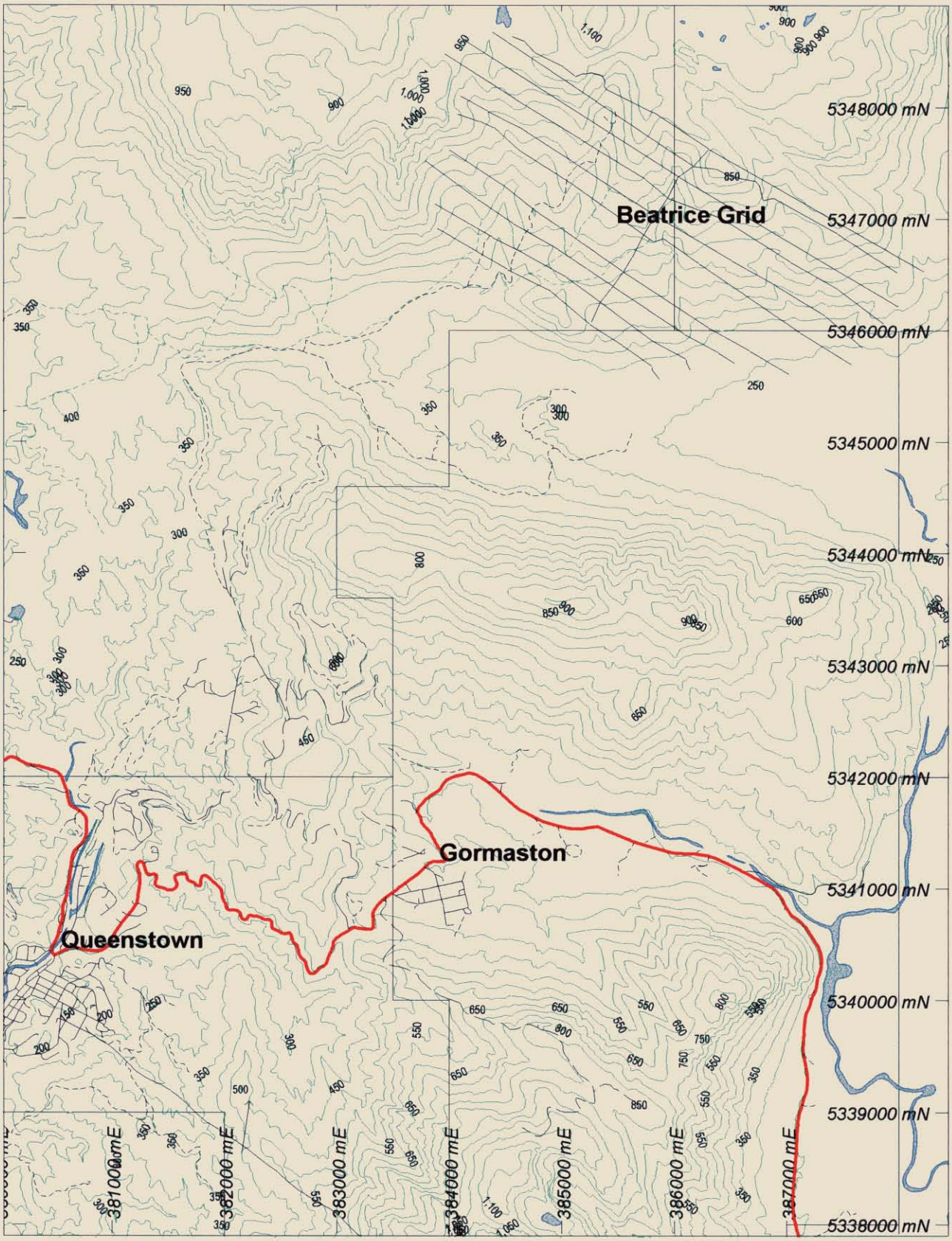
1:250K SK\55-SW Sheet

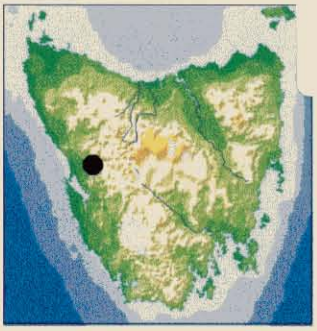
9. REFERENCES

Dauth, C., 1999, Modelling and interpretation of downhole electromagnetic data on MS08 at the Beatrice Prospect May 1999 EL6/98; Pasminco Exploration Internal Report No. VC246

Dauth, C., 1999, Modelling and interpretation of induced polarisation data from the Beatrice Prospect February - March 1999 EL 6/98; Pasminco Exploration Internal Report No. VC247

Denwer, K. D., 1998, Beatrice Prospect Literature Review, In-house Technical Note for Pasminco Exploration, *not published*





5 cm

SCALE 1:50,000

0 1.25 2.5

Kilometres

Projection: UTM
Datum: AGD84
Zone: 55

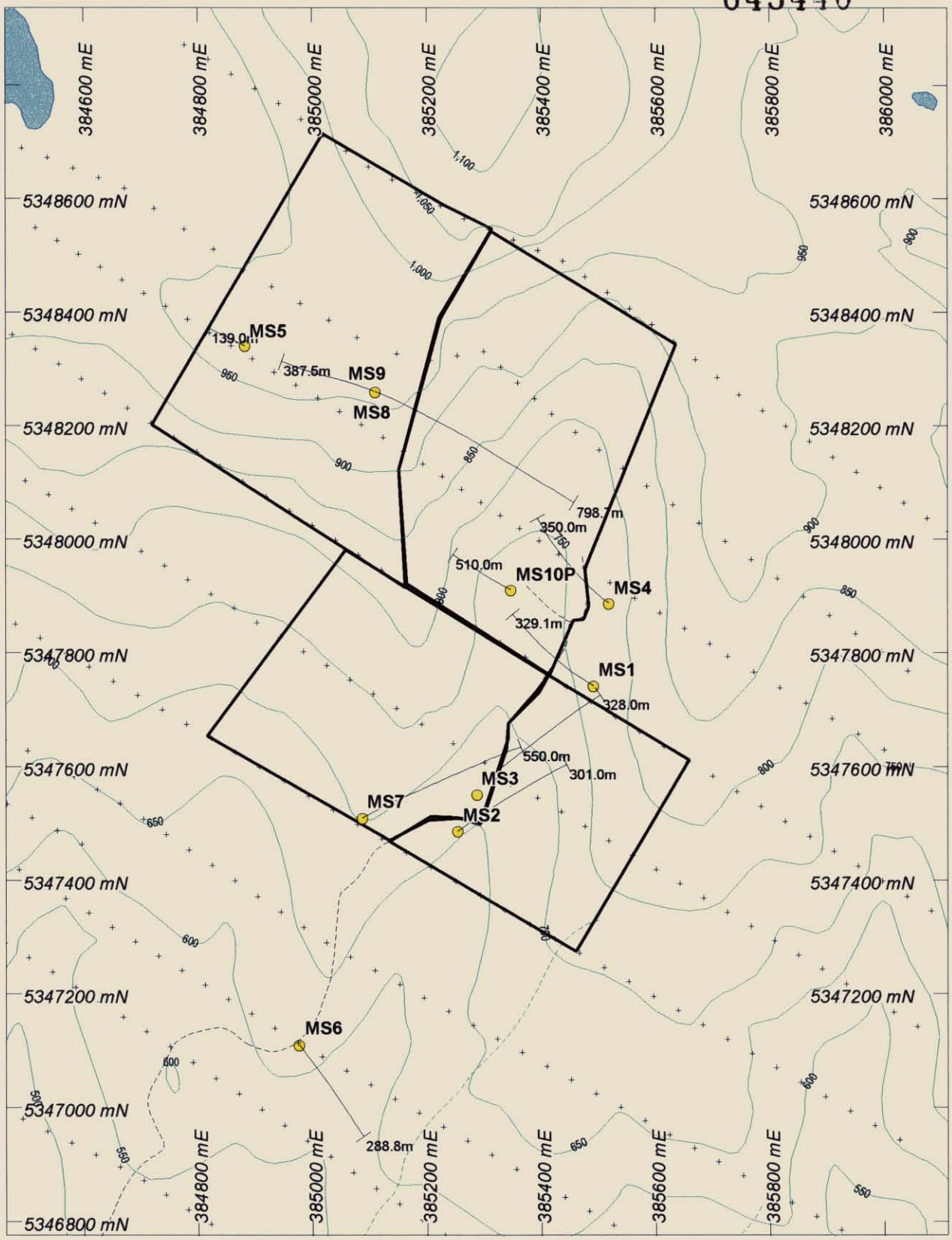
PASMINCO EXPLORATION
ETS Melbourne

TASMANIA

Date: August 1999	QUEENSTOWN EL 6/98
Author: C Dauth	BEATRICE PROSPECT
Office: ETS	Location Plan
Ref:	
Scale: 1:50 000	Projection: SUTM55 AGD84

Figure No:

645440



SCALE 1:10,000

0 100 200 500 1000m

Distances in metres

Projection: UTM
Datum: AGD84
Zone: 55

5 cm

PASMINCO EXPLORATION

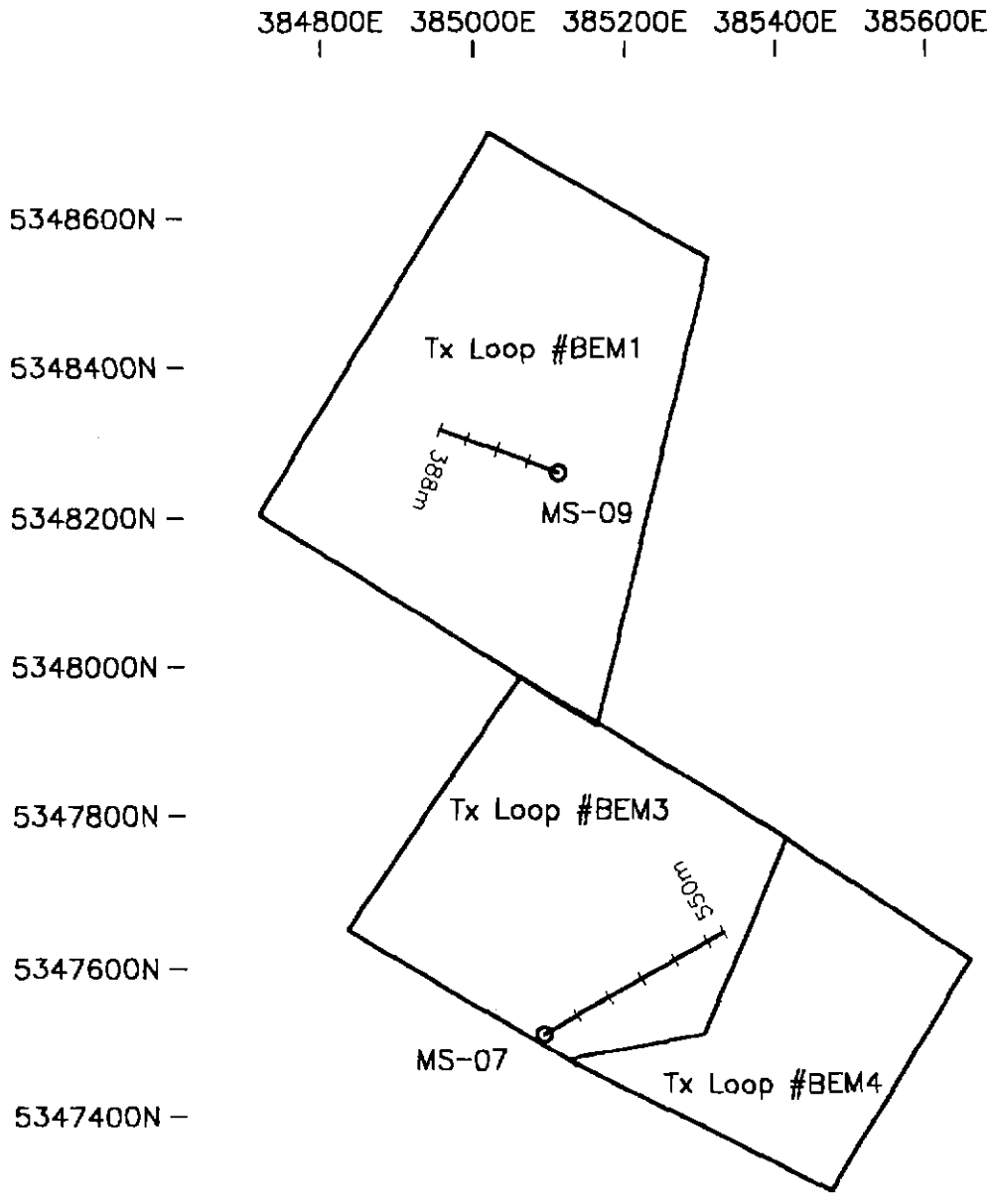
Queentown EL 6/98
Beatrice Prospect
Down-hole EM
Transmitter Loop Locations

Figure 2

APPENDIX I

645441

Contractor Report on DHEM Survey



Scale 1:10000

100 0 100 200

(metres)

5 cm

645443

Pasminco Exploration

Beatrice

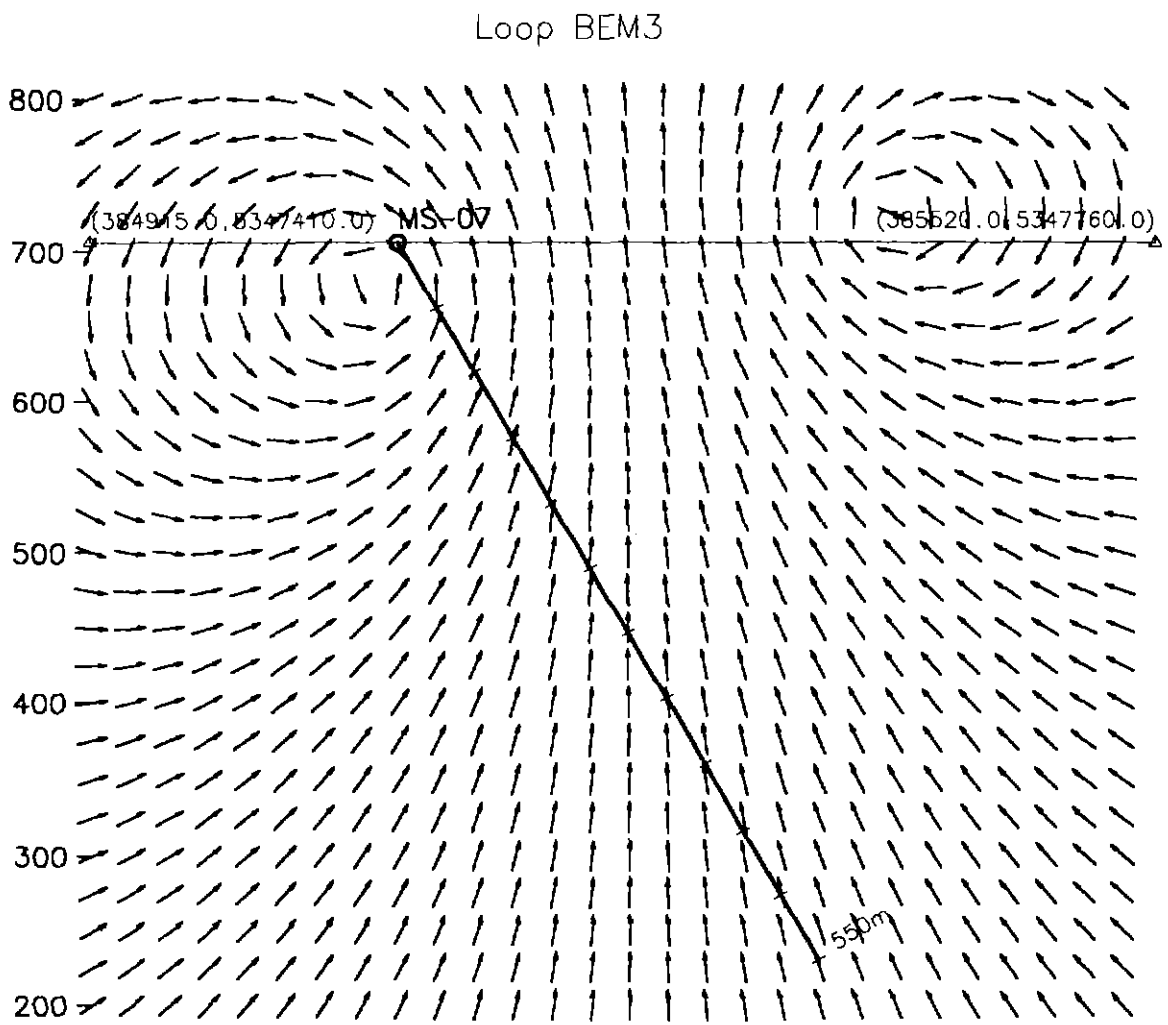
3-D Borehole Pulse EM Survey

Borehole & Loop Location Map

Hole: MS-07 & MS-09

Survey Date: Jul 26/27, 1999

Outer-Rim Exploration Services



Scale 1:5000

100 0 100

(metres)

5 cm

Pasminco Exploration

Beatrice

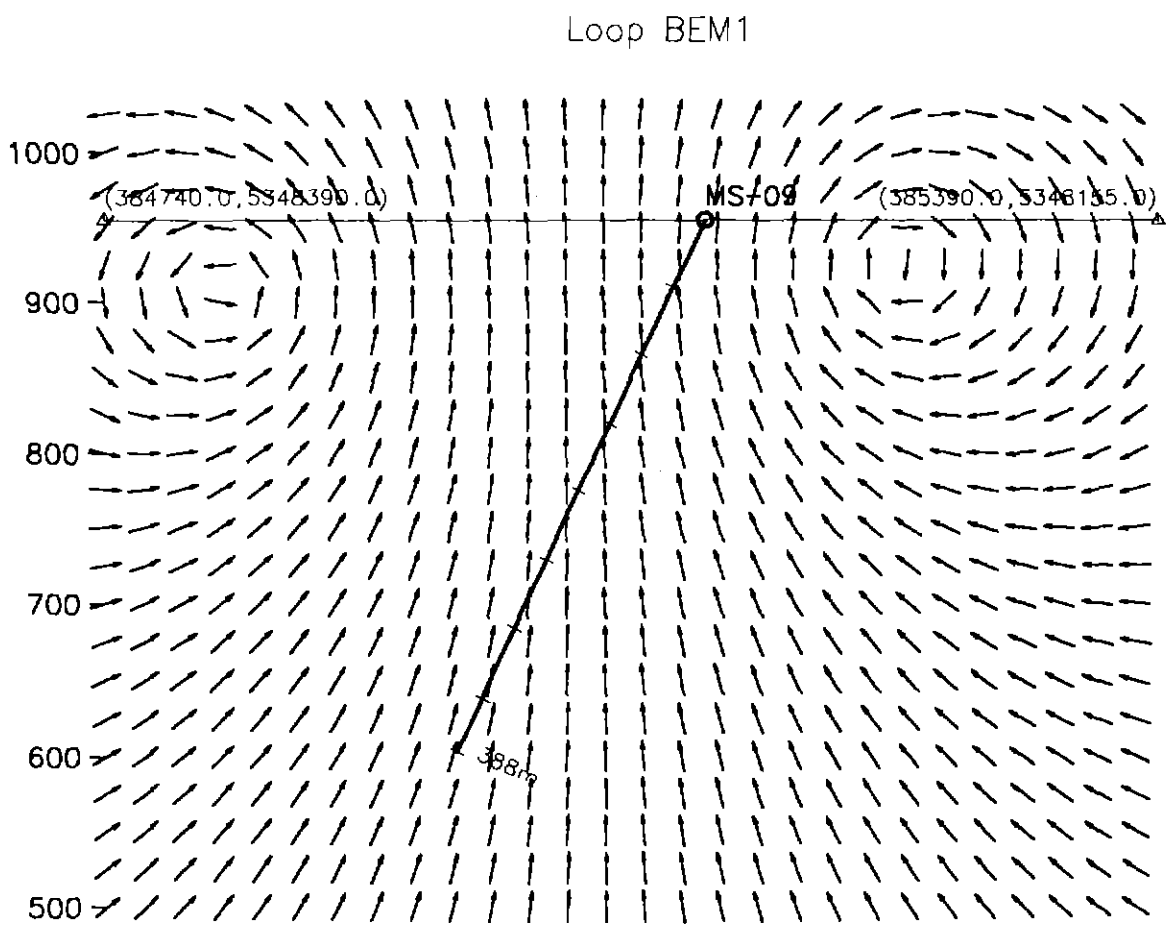
3-D Borehole Pulse EM Survey

Hole Section with Primary Field

Hole: MS-07

Survey Date: Jul 26, 1999

Outer-Rim Exploration Services



Scale 1:5000

50 0 50 100

(metres)

5 cm

Pasminco Exploration

Beatrice

3-D Borehole Pulse EM Survey

Hole Section with Primary Field

Hole: MS-09

Survey Date: Jul 27, 1999

Outer-Rim Exploration Services

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7Z.PEM
Time Base	: 10.00 ms	# Readings	: 53
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 17	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 400m X 400m	Receiver	: Digital #109
Current	: 13 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)

1. 385410m, 5.34777e+06m, 740m
2. 385060m, 5.34798e+06m, 815m
3. 384830m, 5.34765e+06m, 670m
4. 385120m, 5.34748e+06m, 680m
5. 385300m, 5.34751e+06m, 695m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 385088m, 5.34751e+06m, 706m
2. 60deg, 60deg, 550m

Channel Times (usec)

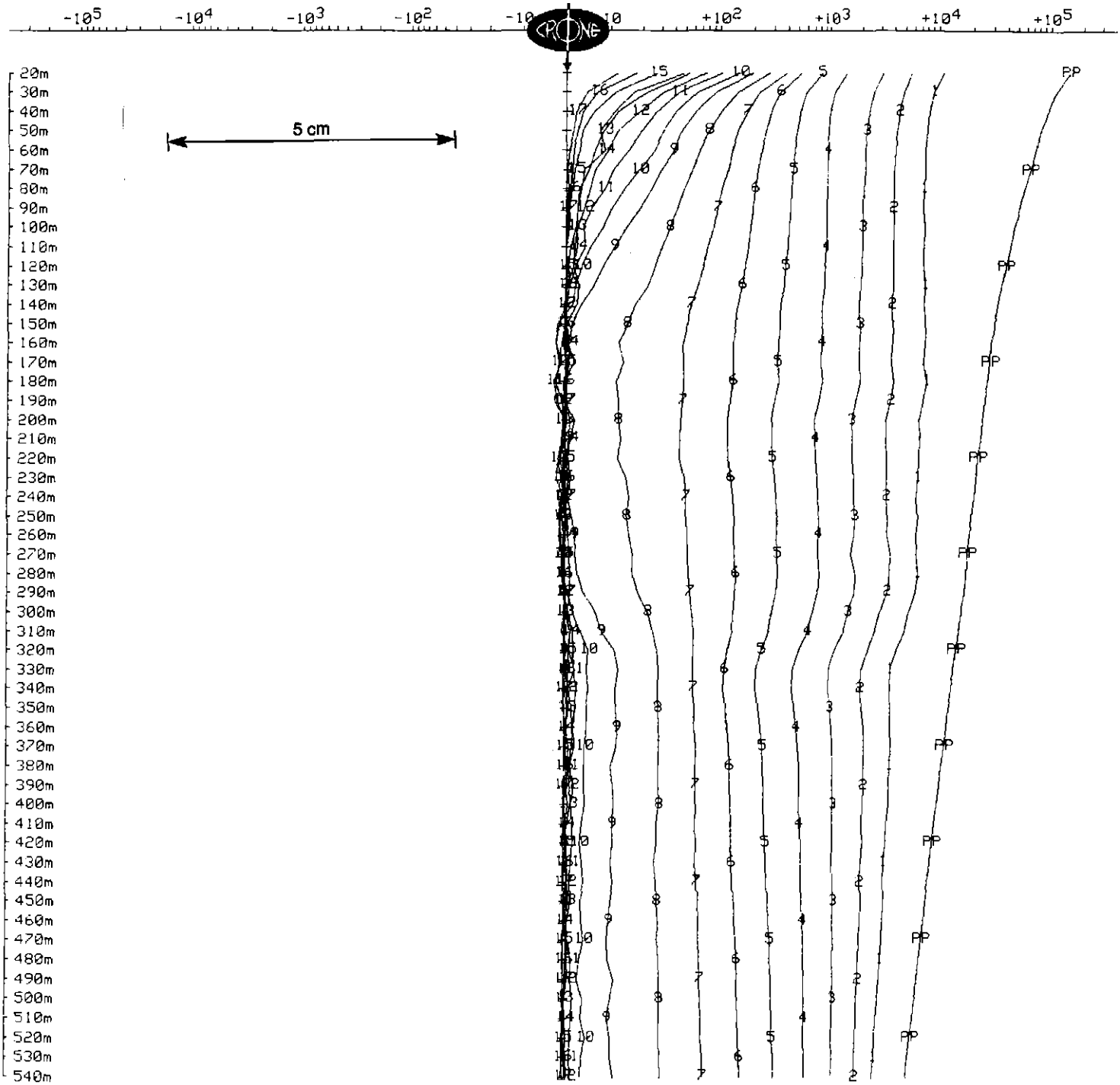
Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	63	56	2	63	86	74
3	86	112	99	4	112	153	133	5	153	203	178
6	203	270	236	7	270	360	315	8	360	482	421
9	482	639	560	10	639	850	745	11	850	1129	990
12	1129	1498	1314	13	1498	1993	1746	14	1993	2646	2320
15	2646	3514	3080	16	3514	4666	4090	17	4666	6192	5429

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:3000



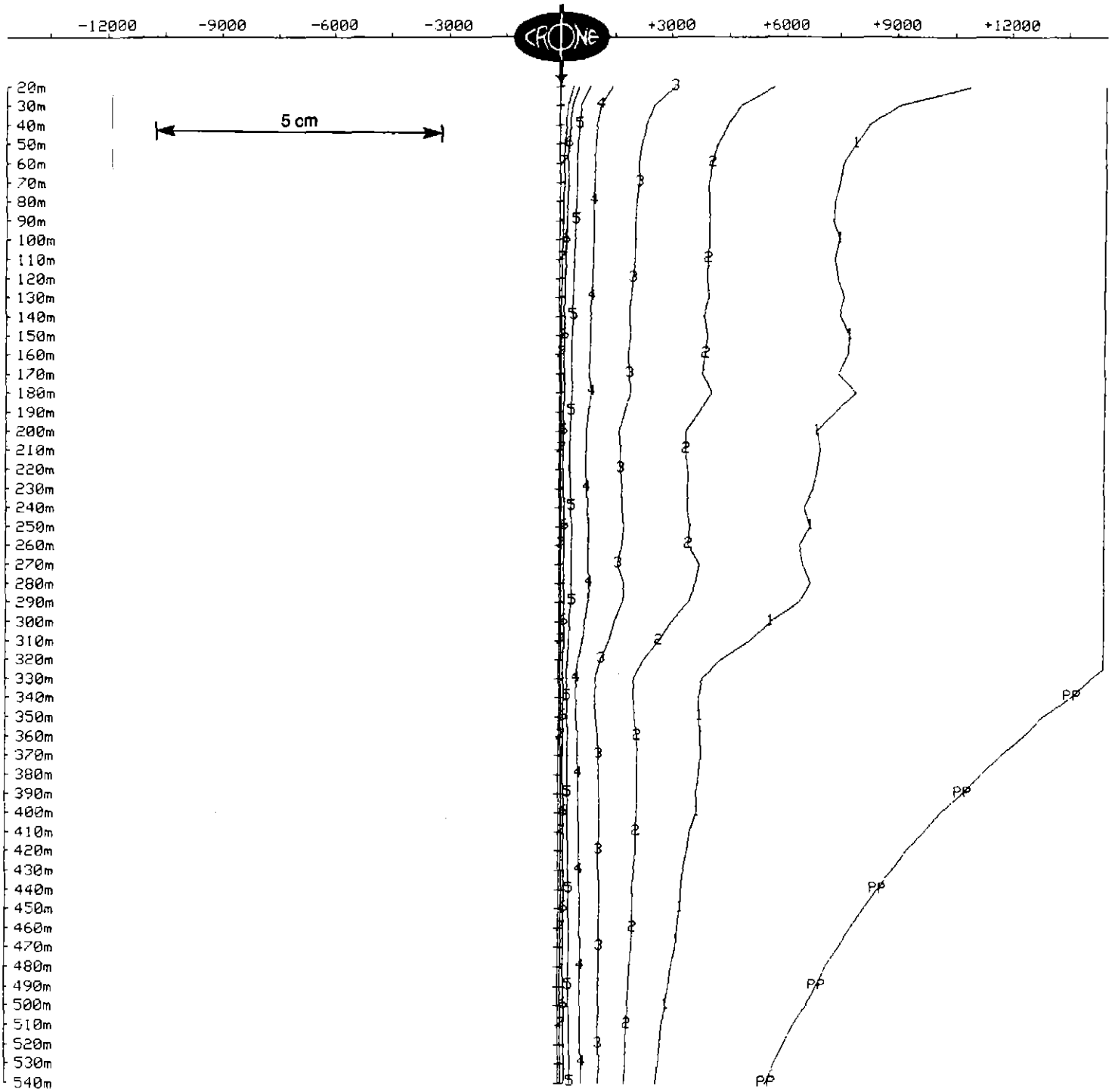
645446

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 17 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1500 nT/s



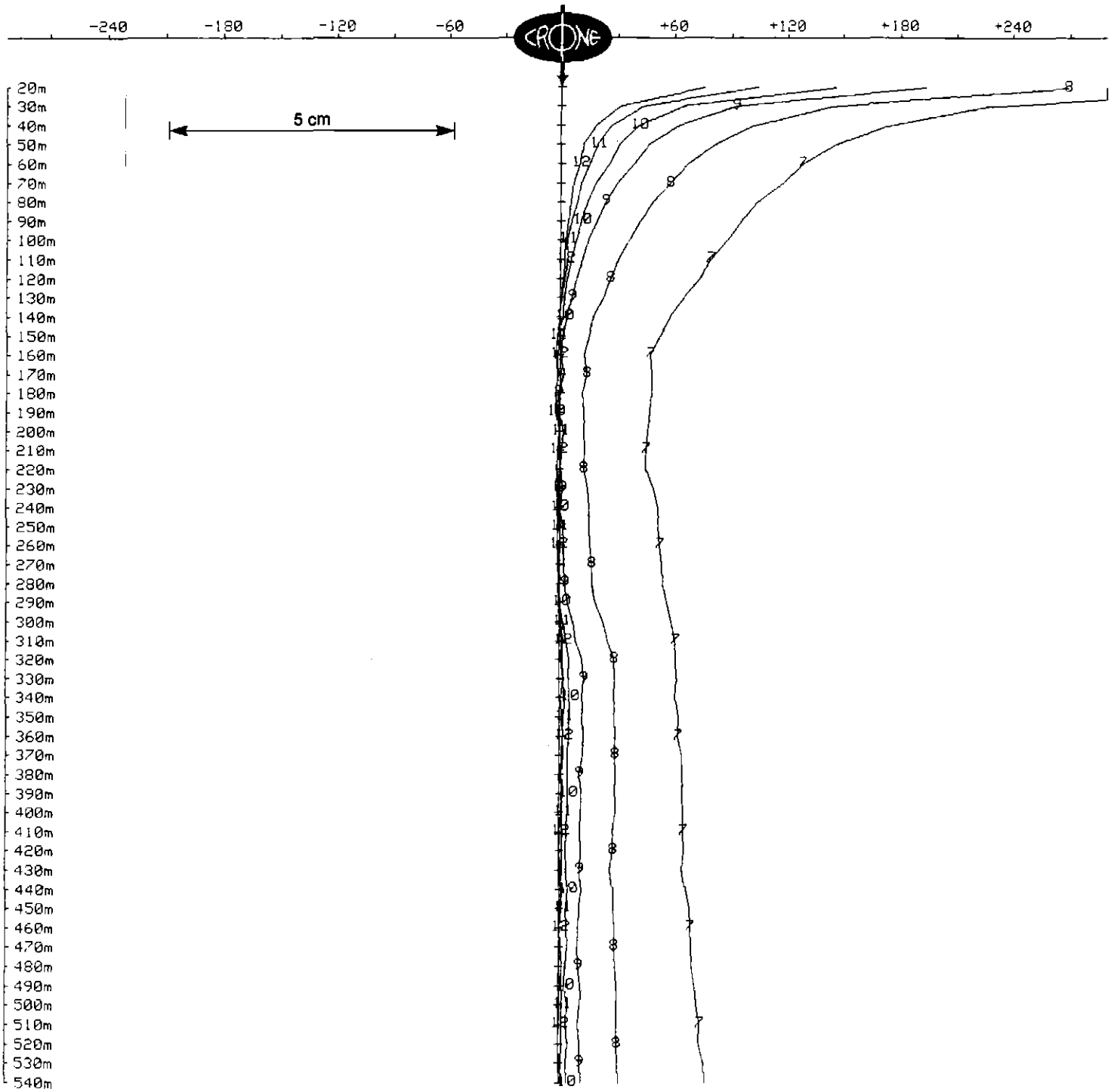
645447

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 30 nT/s



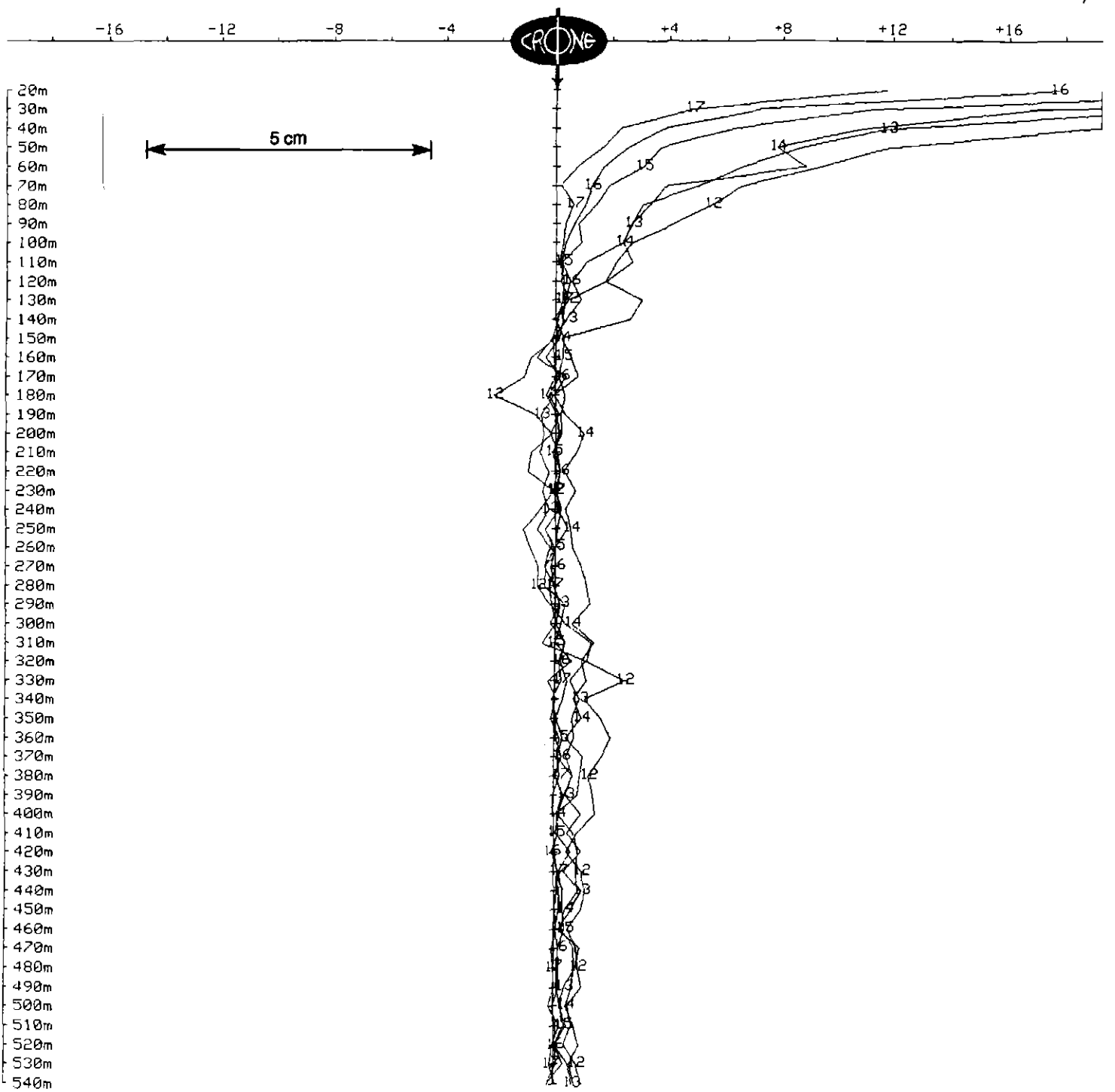
645448

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/s



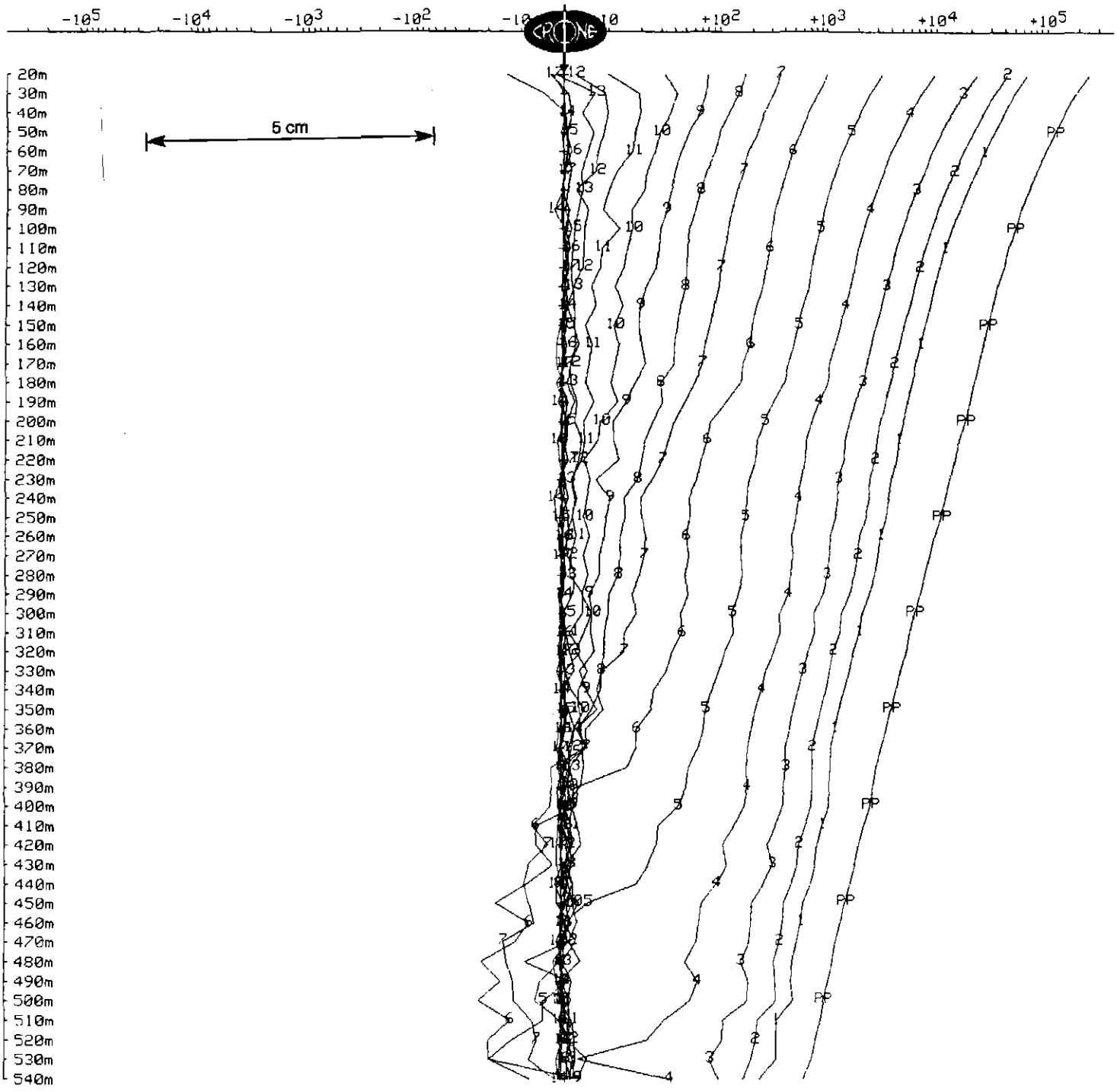
645449

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:3000



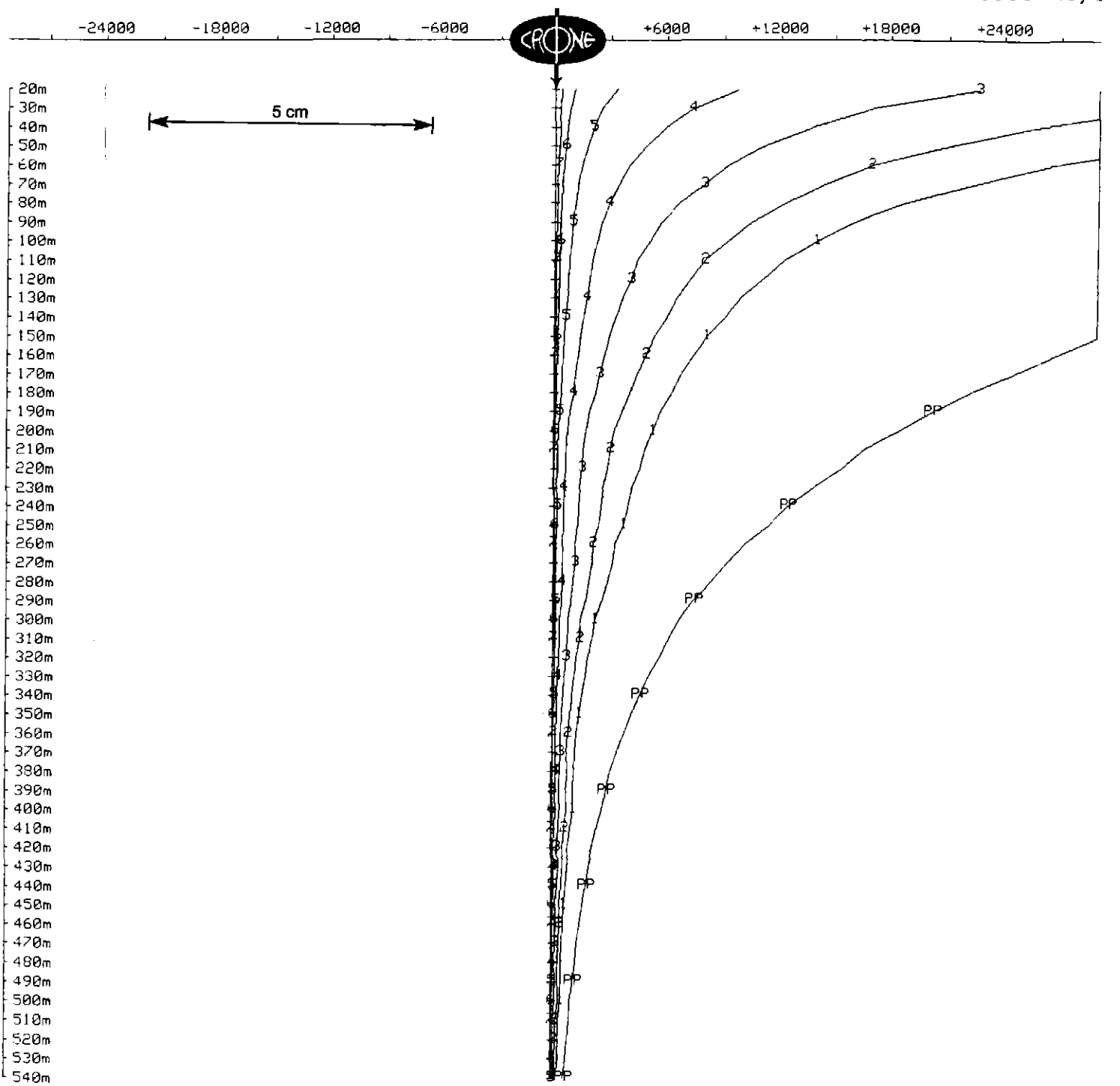
645450

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 7 of 17 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 3000 nT/s



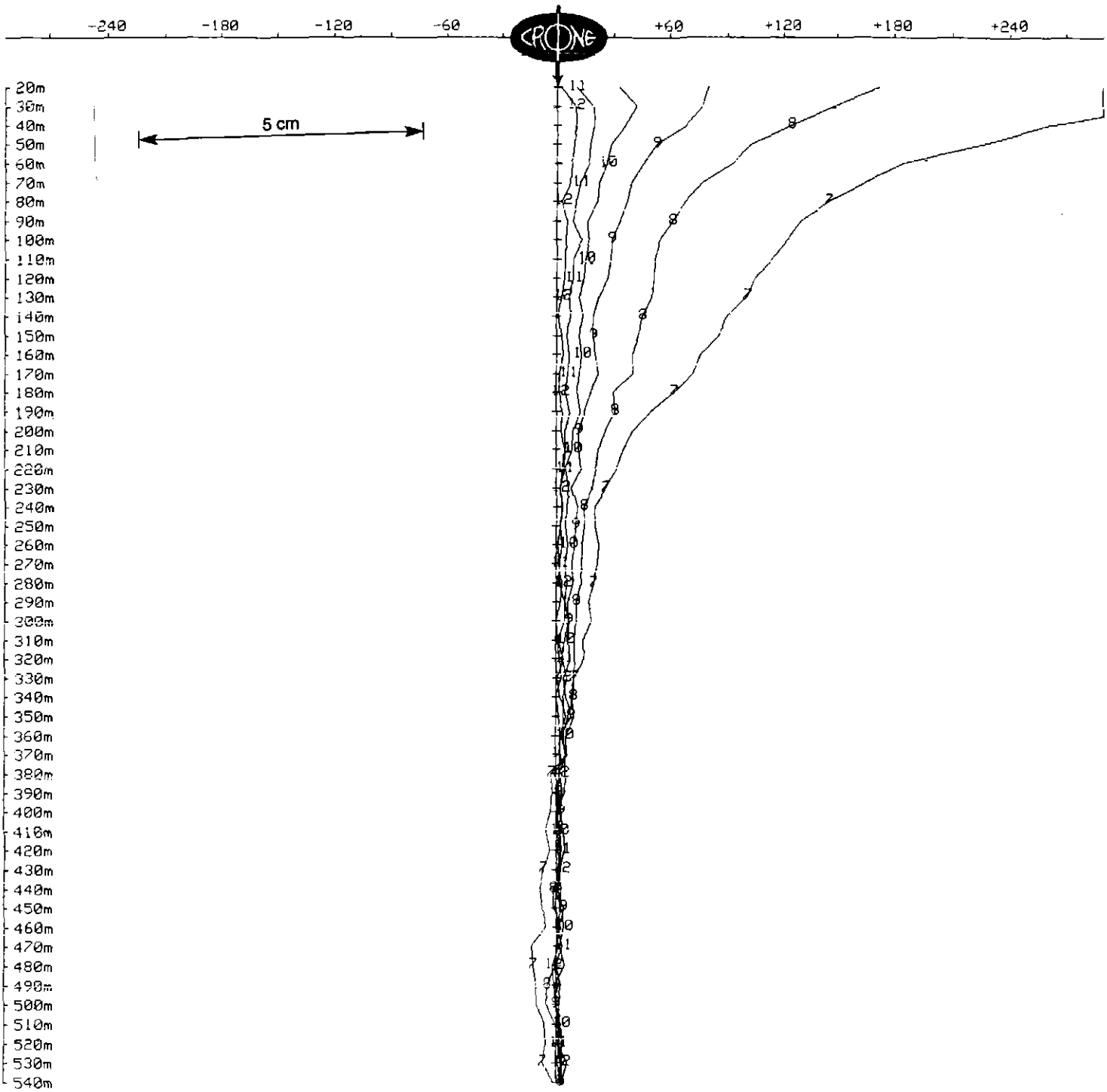
645451

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 30 nT/s



645452

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

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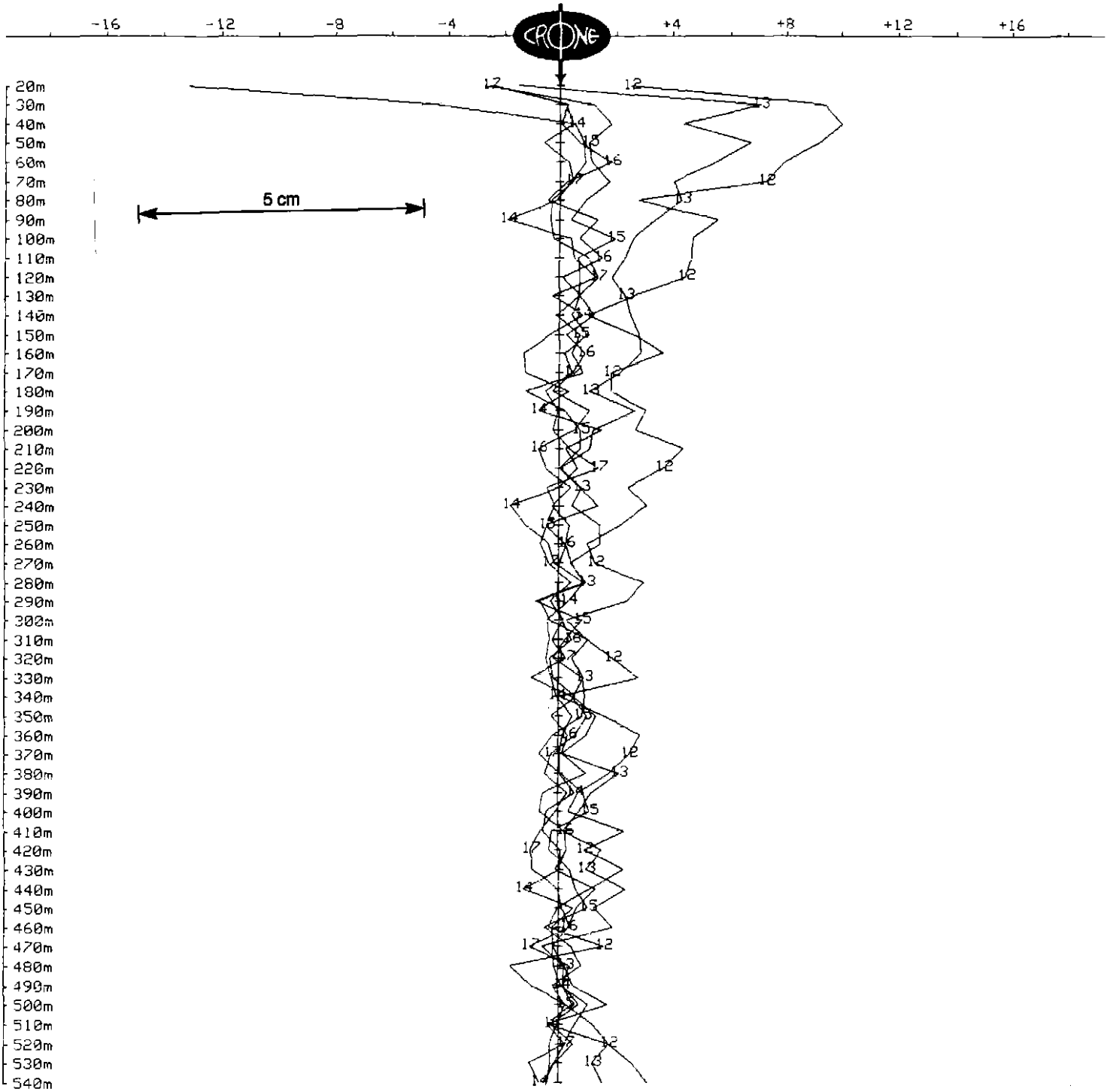
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/s



645453

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

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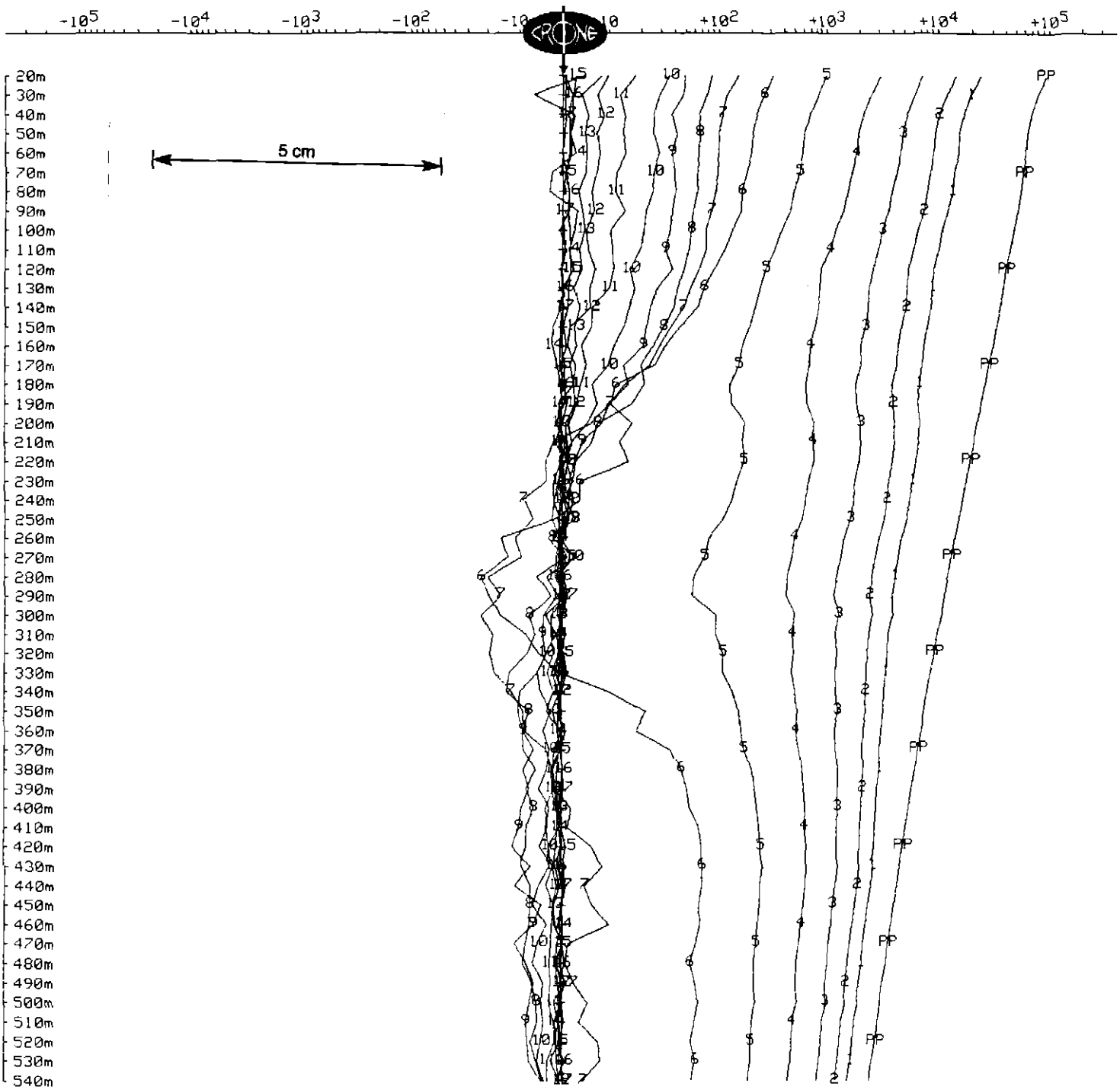
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:3000



645454

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

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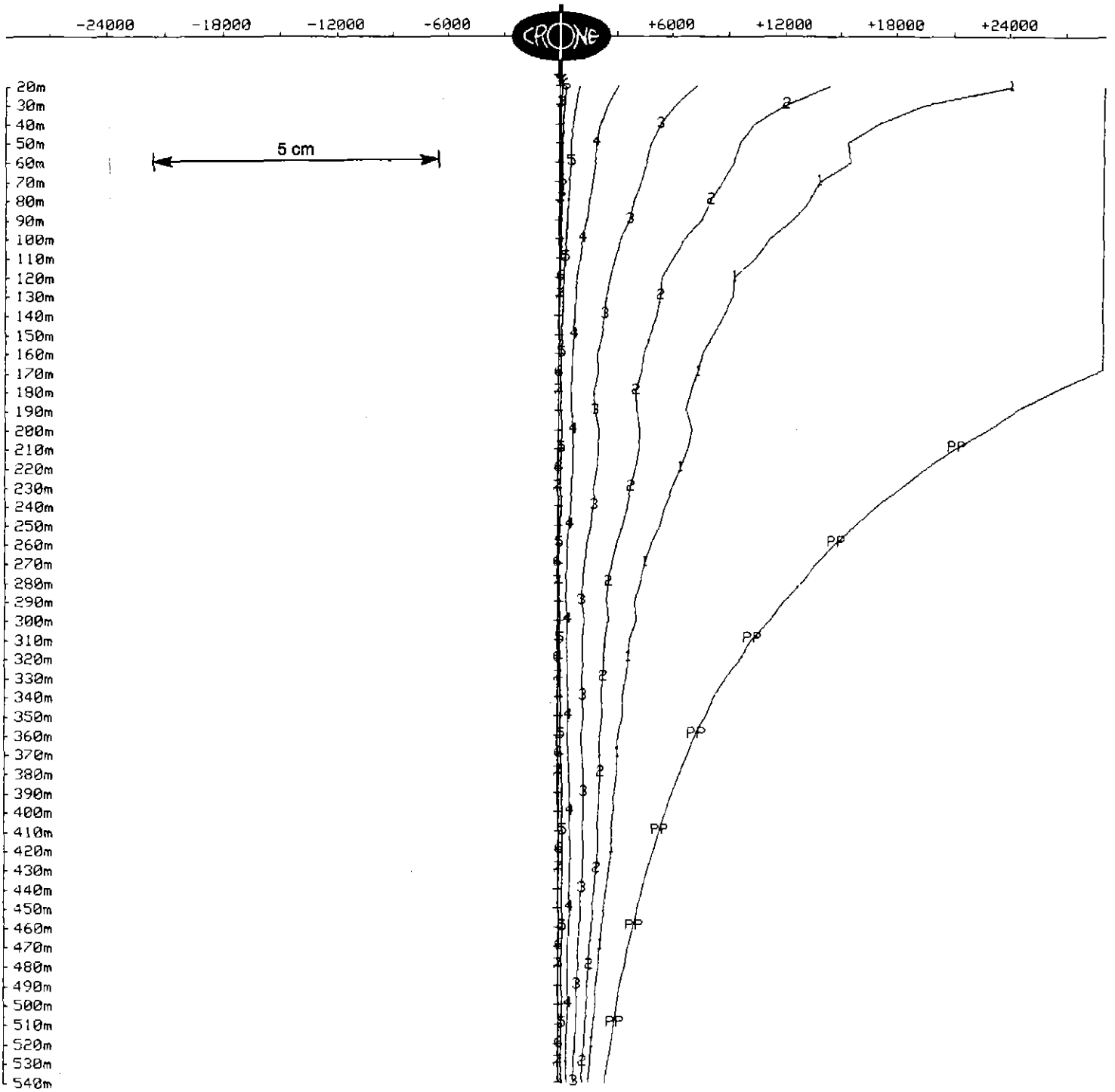
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 17 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 3000 nT/s



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OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

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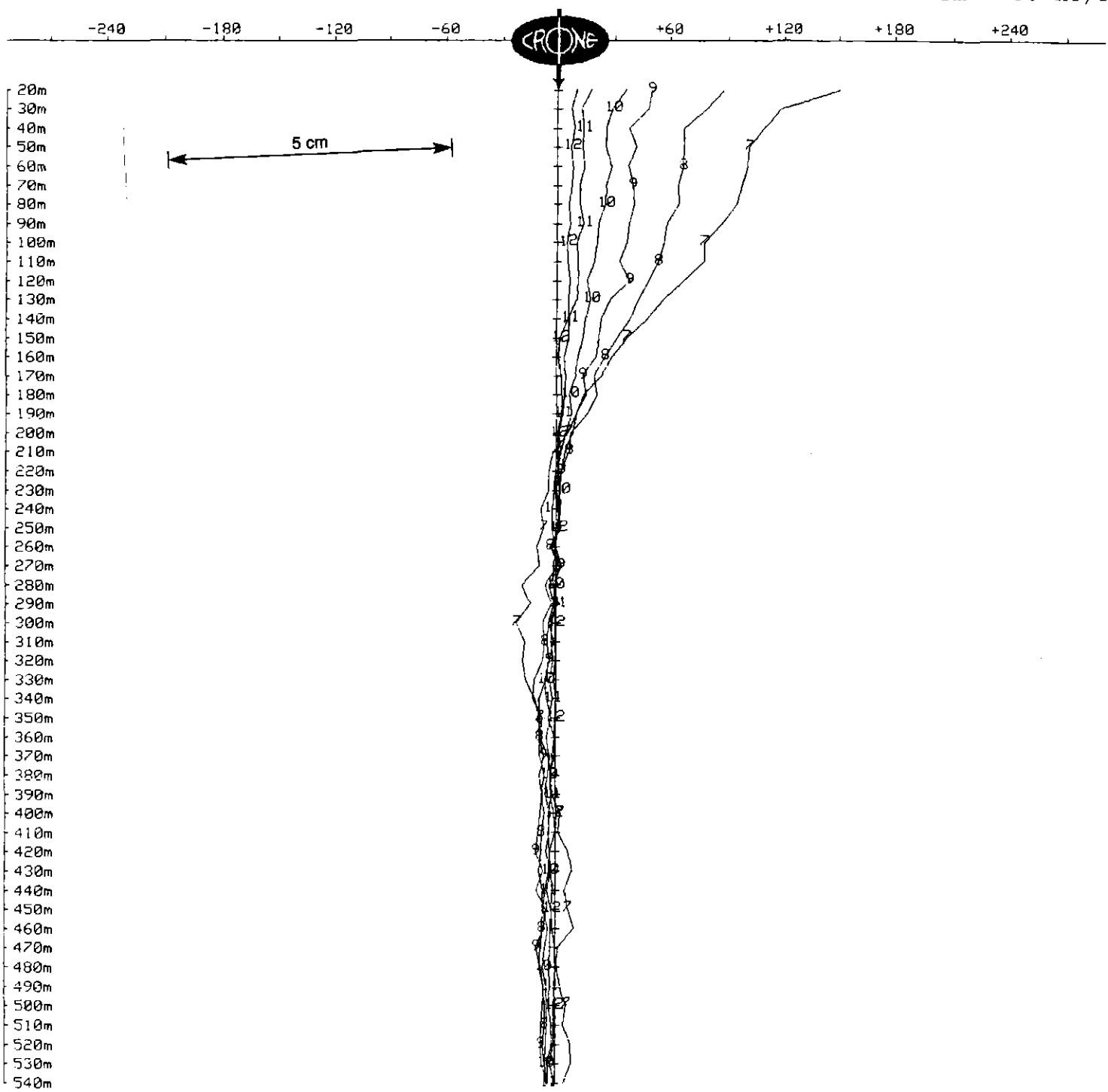
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 30 nT/s



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OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

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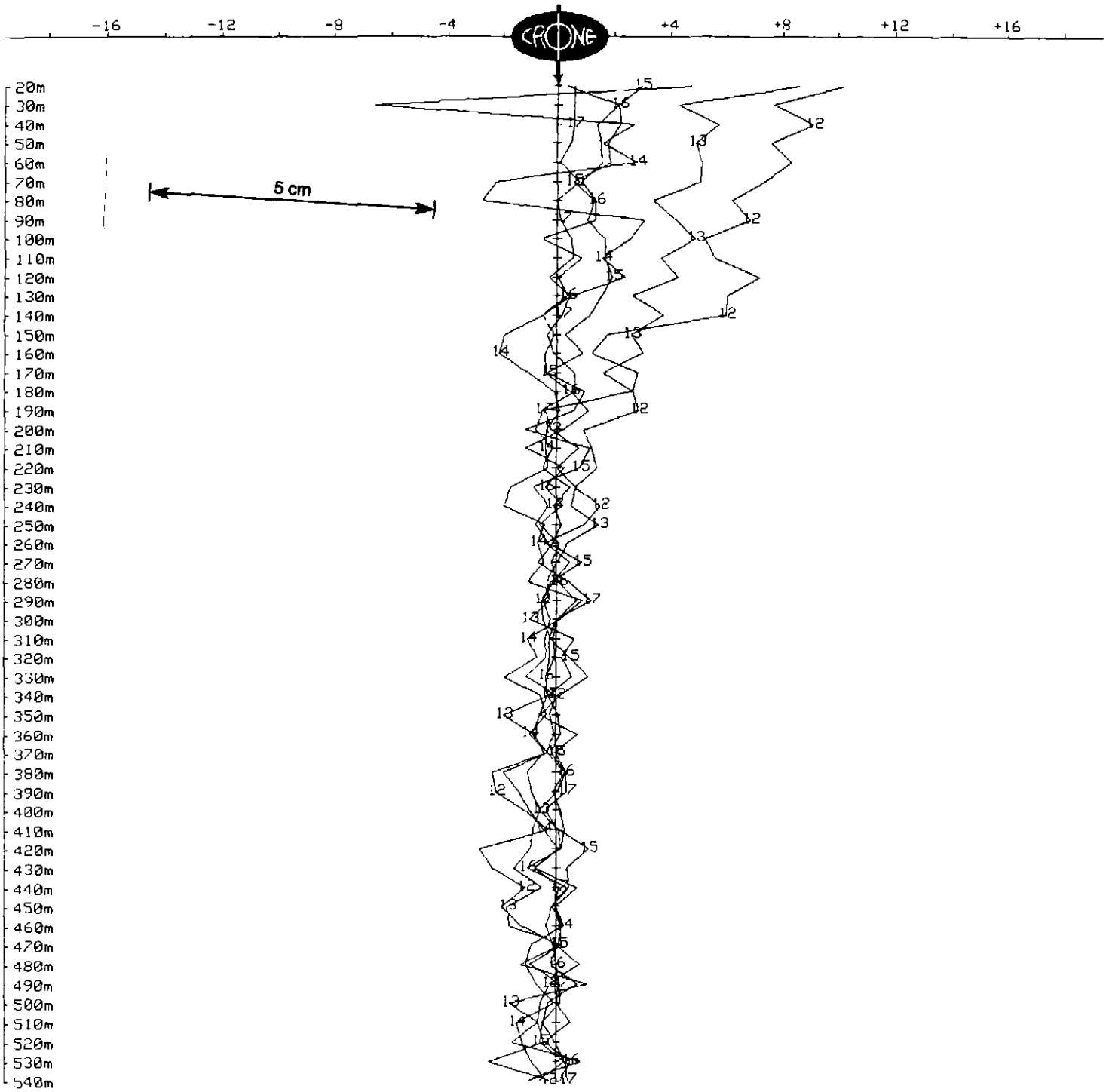
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/s



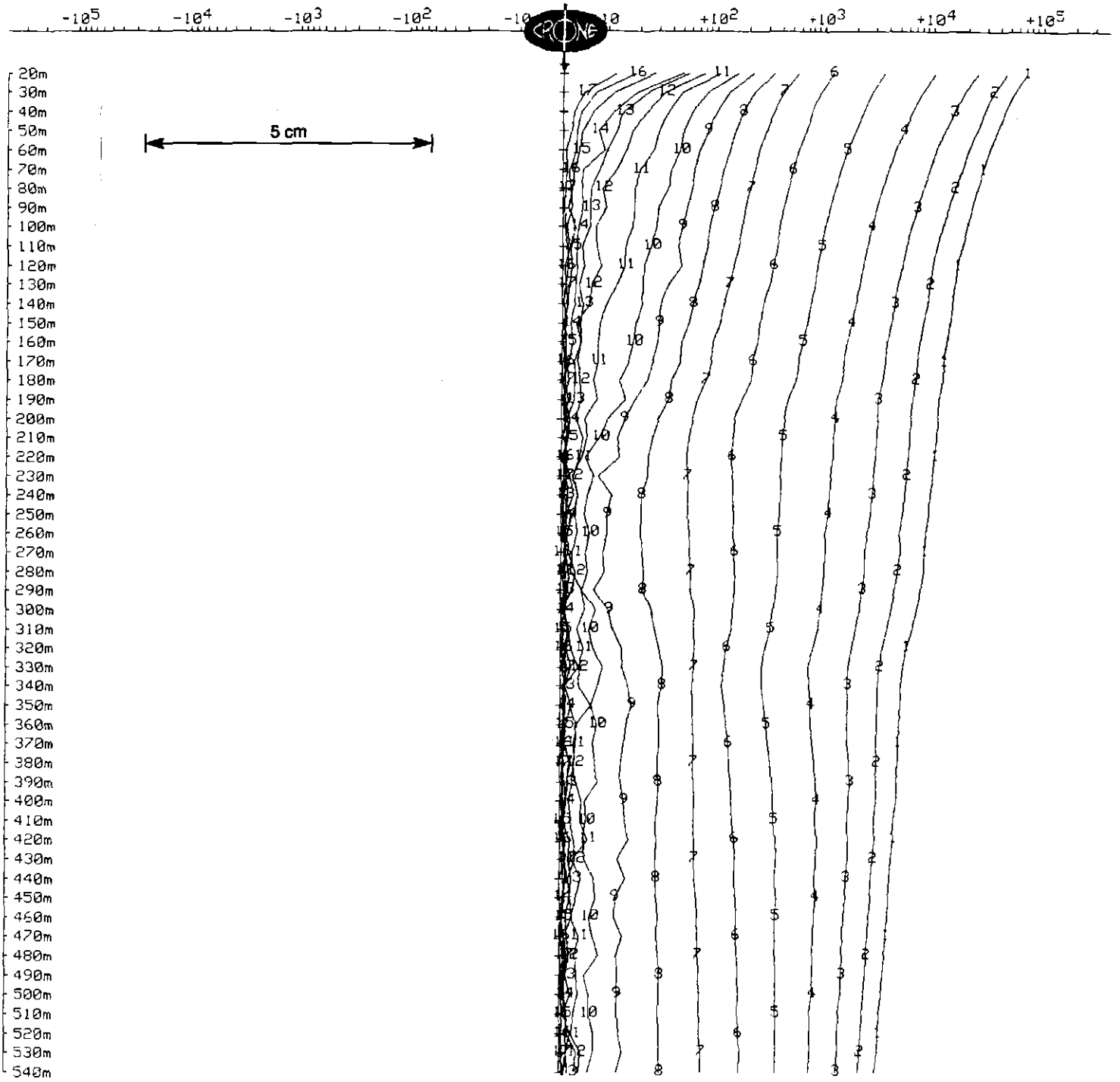
645457

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM3
Date	: Jul 26, 1999	File name	: MS7XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 17 of 17 channels

Scale: 1:3000



645458

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74Z.PEM
Time Base	: 10.00 ms	# Readings	: 54
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 17	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 400m X 300m	Receiver	: Digital #109
Current	: 20 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)

1. 385410m, 5.34777e+06m, 740m
2. 385300m, 5.34751e+06m, 695m
3. 385120m, 5.34748e+06m, 680m
4. 385470m, 5.3473e+06m, 710m
5. 385655m, 5.34761e+06m, 830m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 385088m, 5.34751e+06m, 706m
2. 60deg, 60deg, 550m

Channel Times (usec)

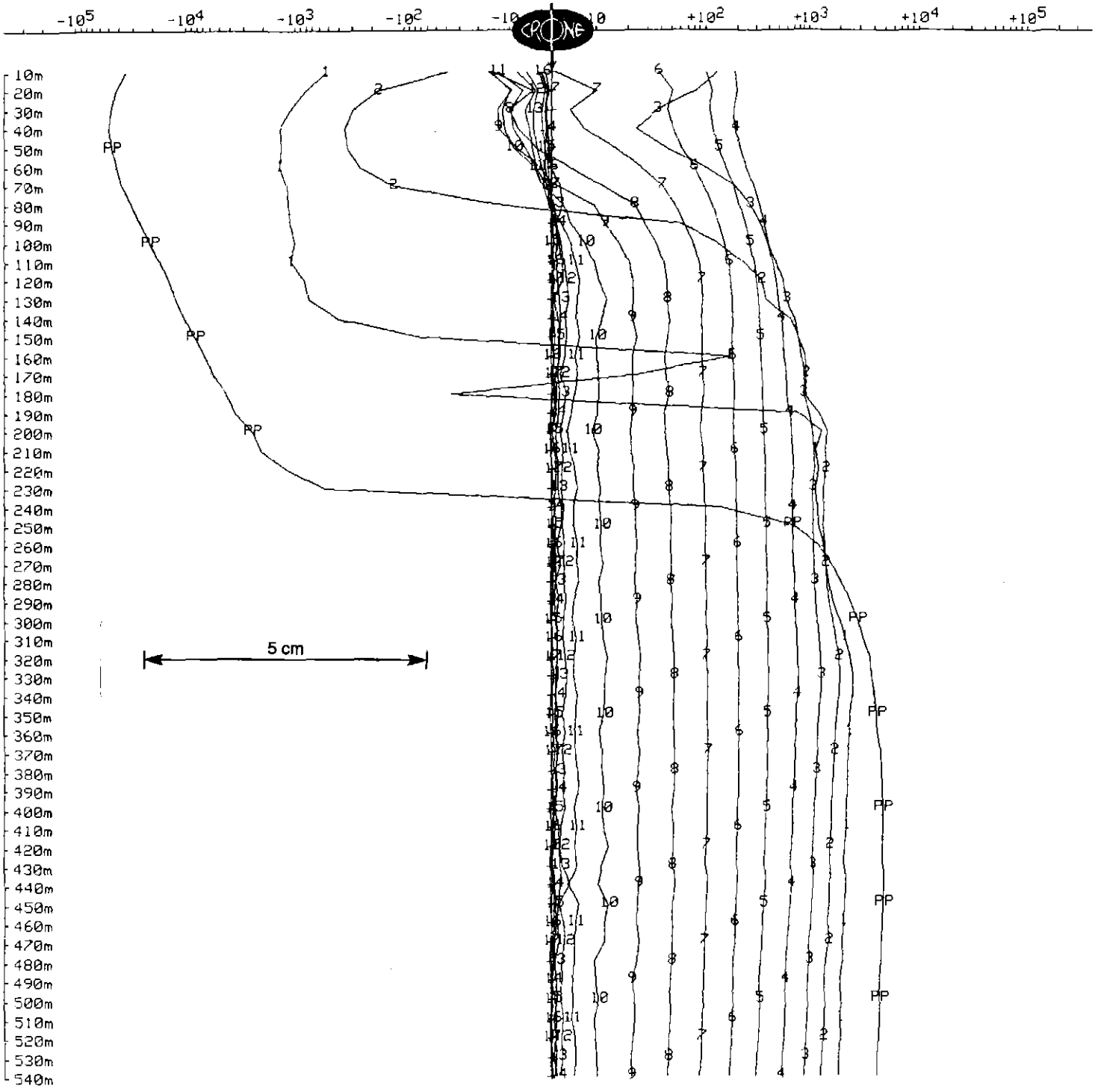
Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	63	56	2	63	86	74
3	86	112	99	4	112	153	133	5	153	203	178
6	203	270	236	7	270	360	315	8	360	482	421
9	482	639	560	10	639	850	745	11	850	1129	990
12	1129	1498	1314	13	1498	1993	1746	14	1993	2646	2320
15	2646	3514	3080	16	3514	4666	4090	17	4666	6192	5429

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:3000



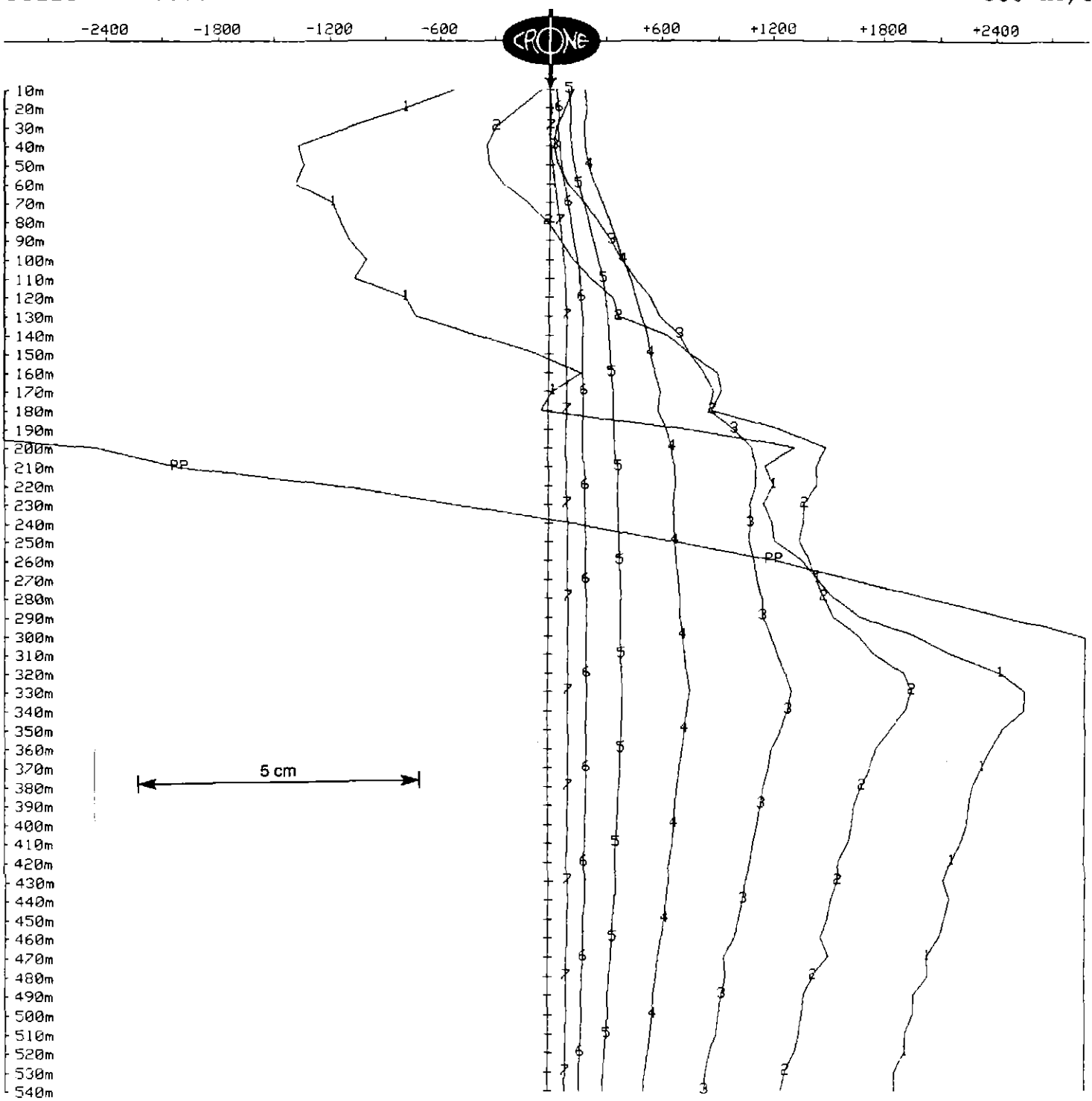
645400

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 17 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 300 nT/s



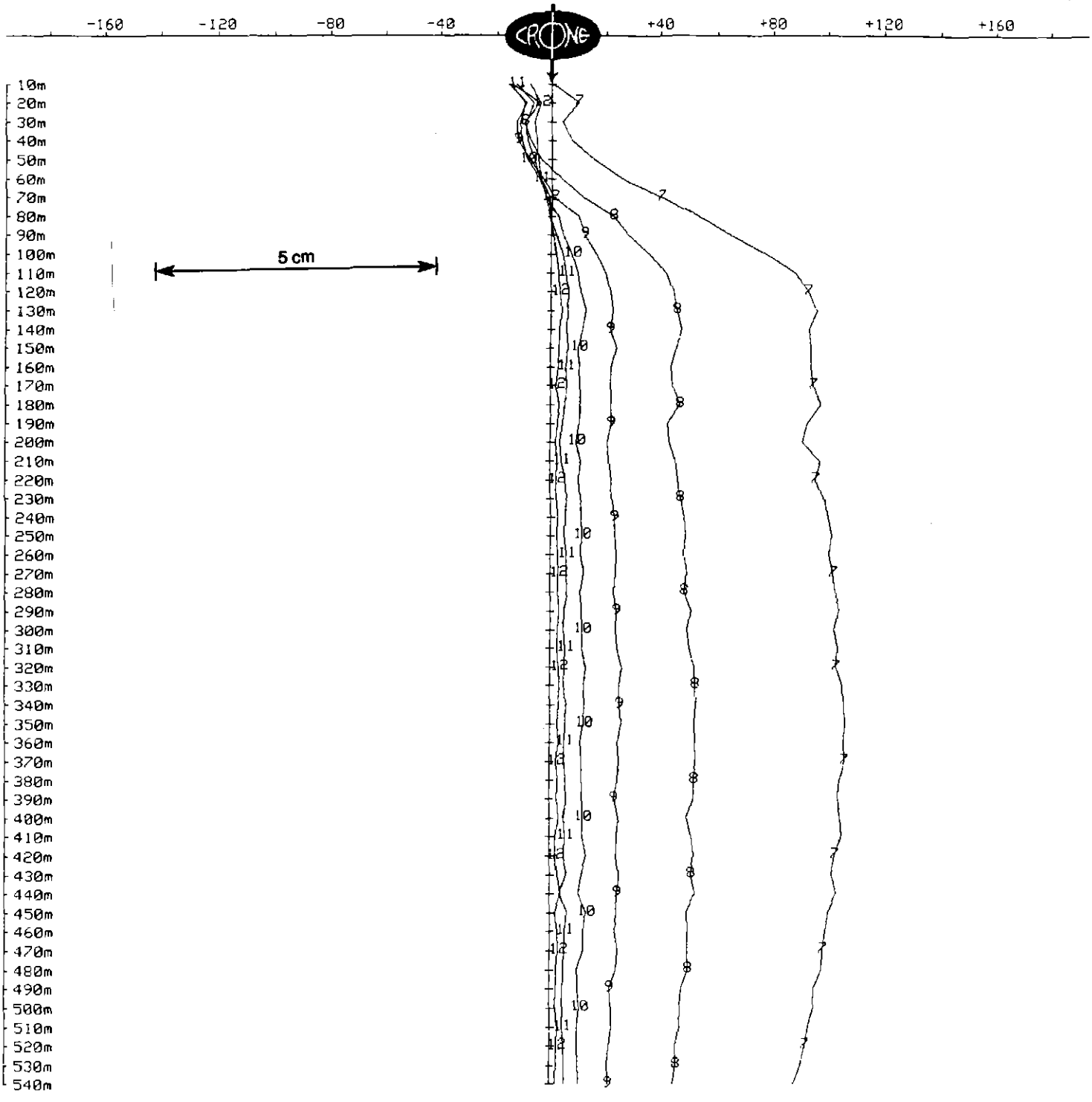
645461

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 20 nT/s



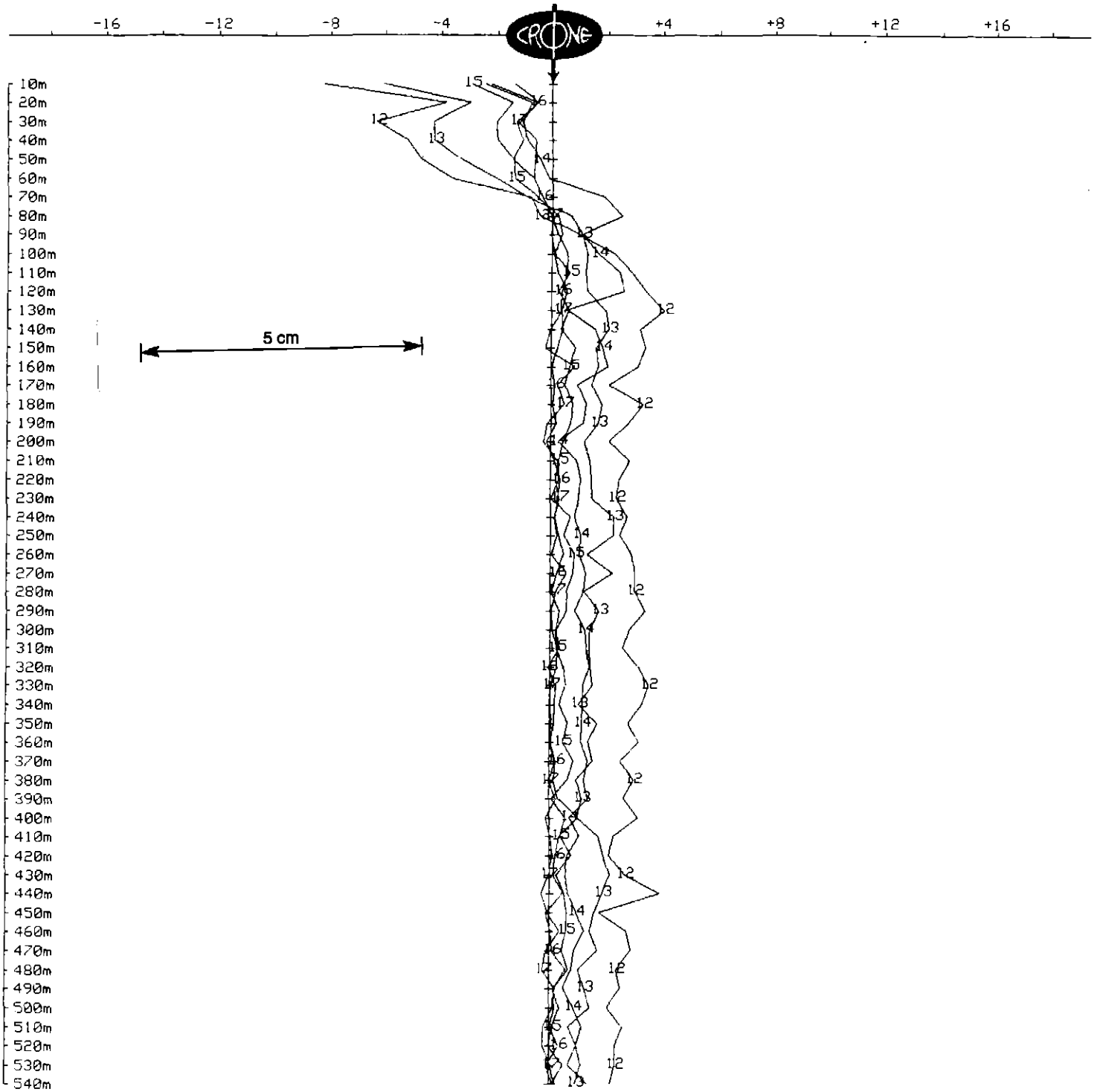
645462

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/s



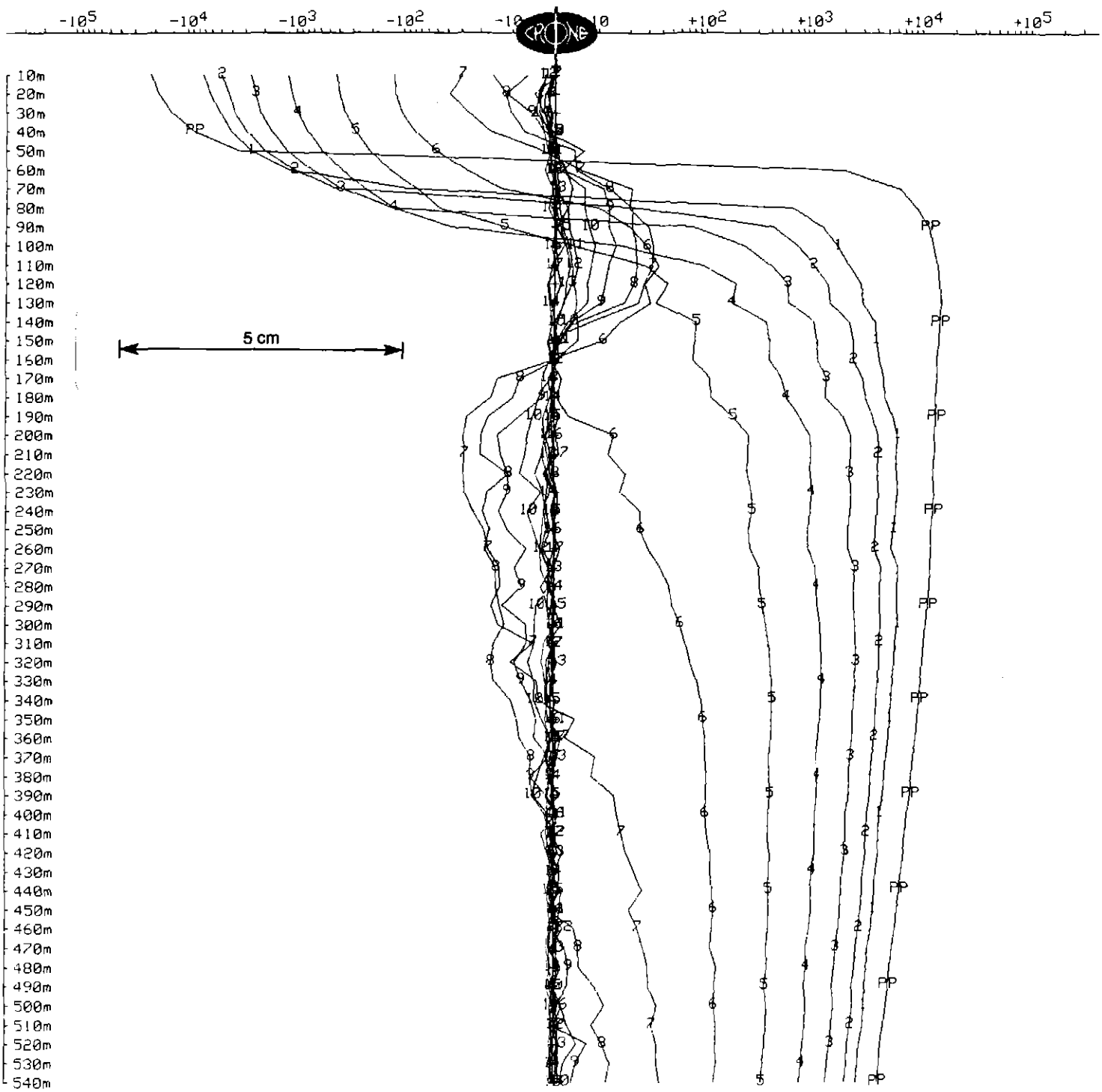
645463

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:3000



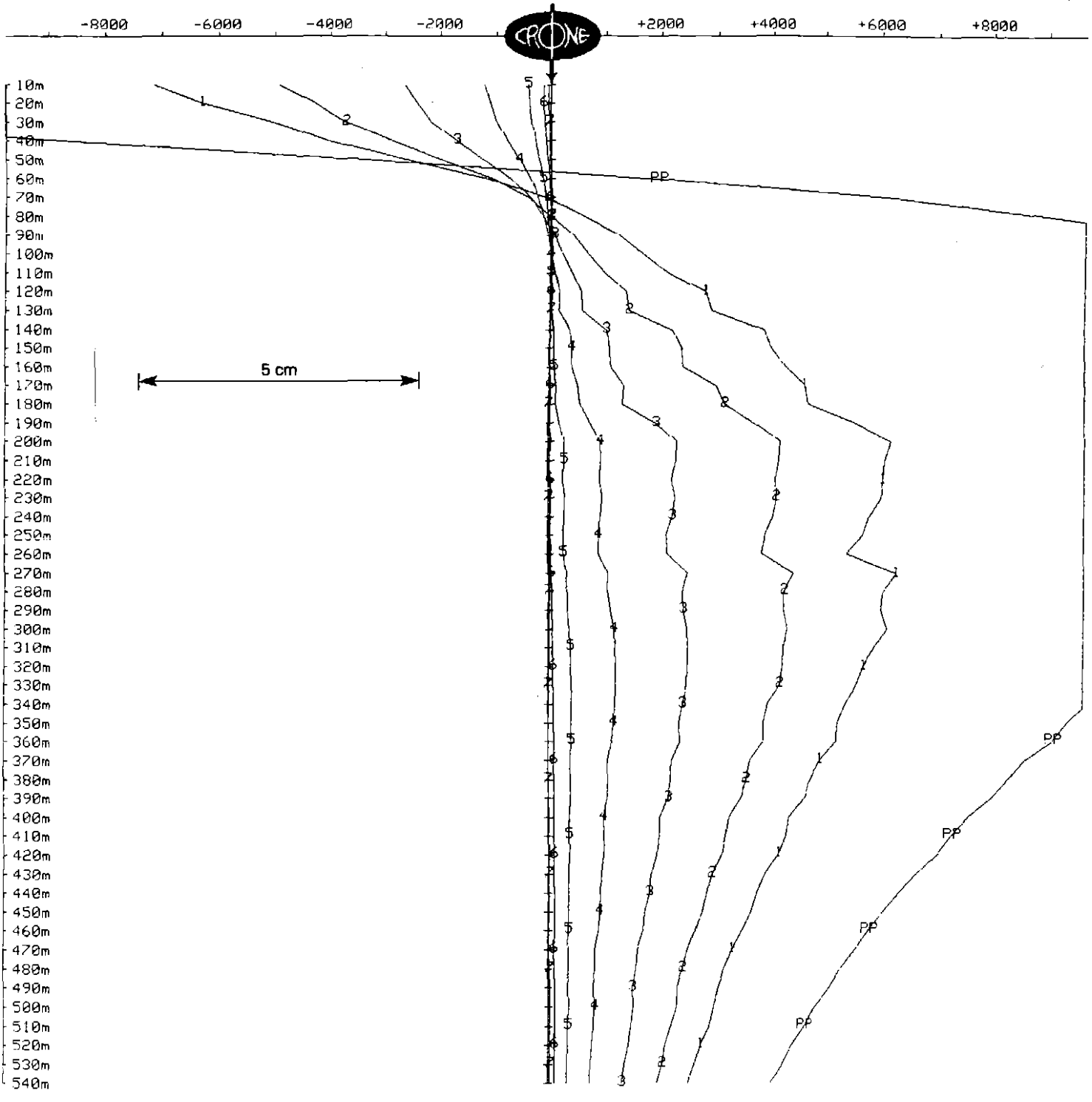
645464

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 7 of 17 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT/s



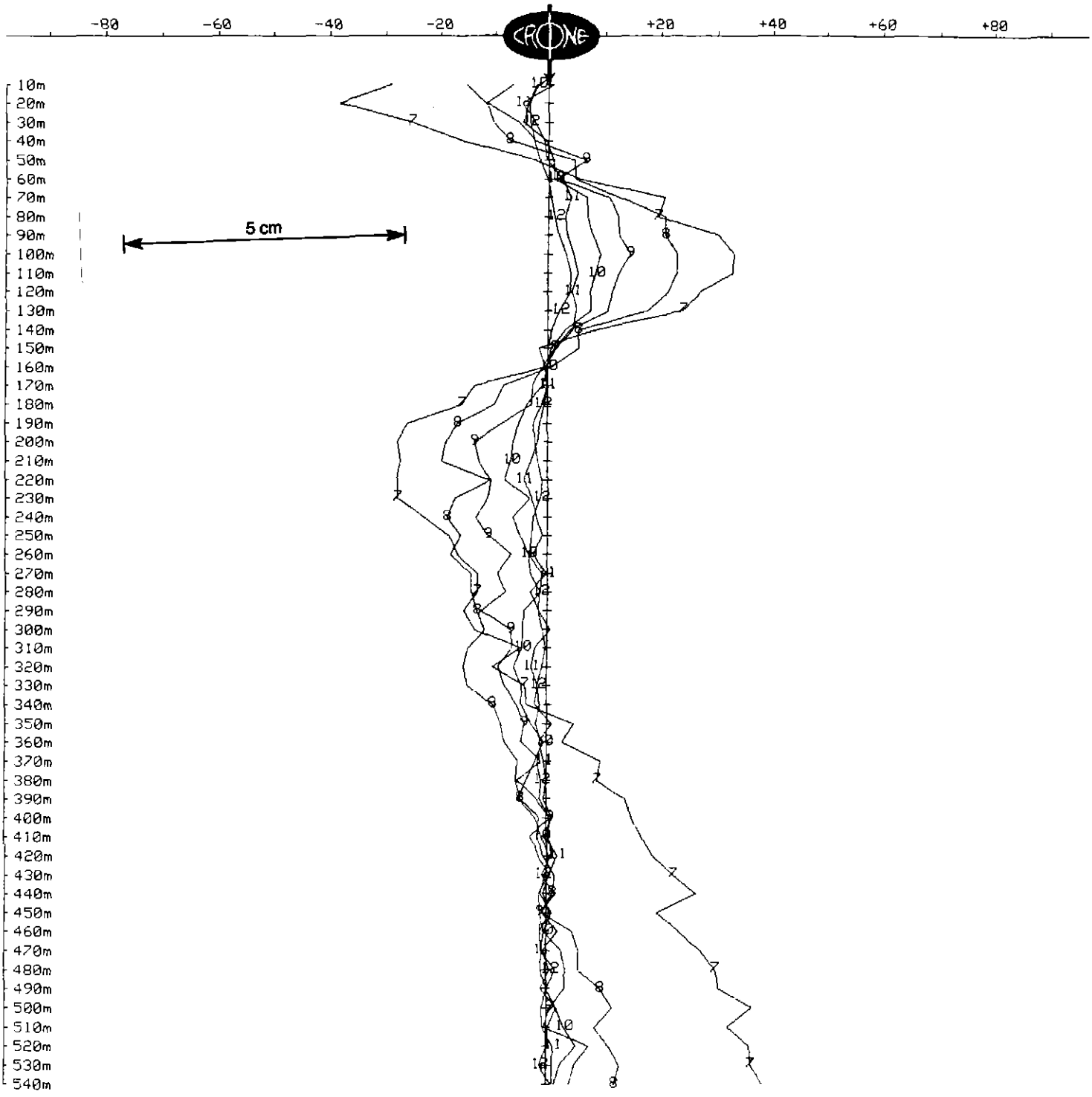
645465

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 10 nT/s



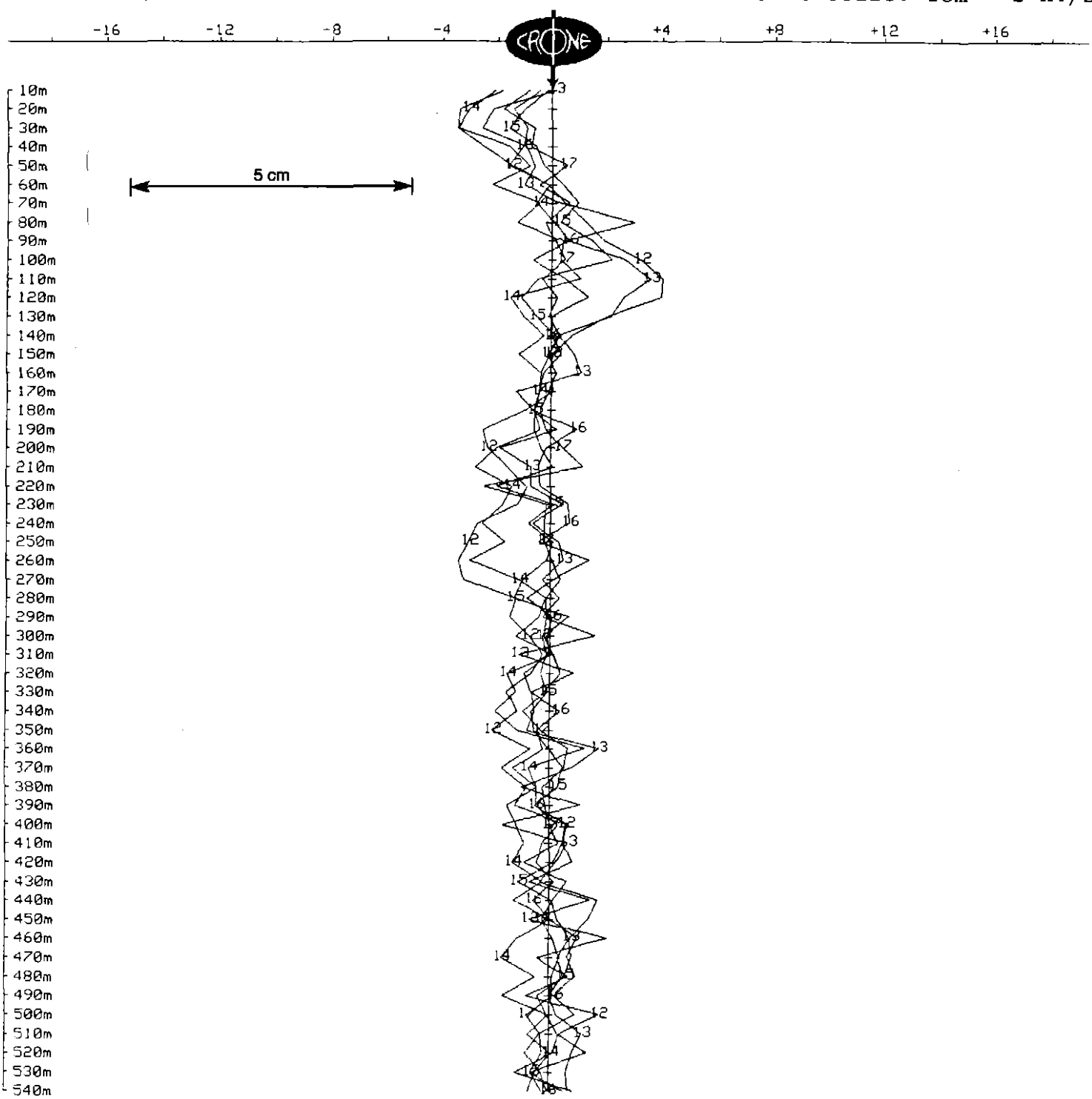
645466

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/s



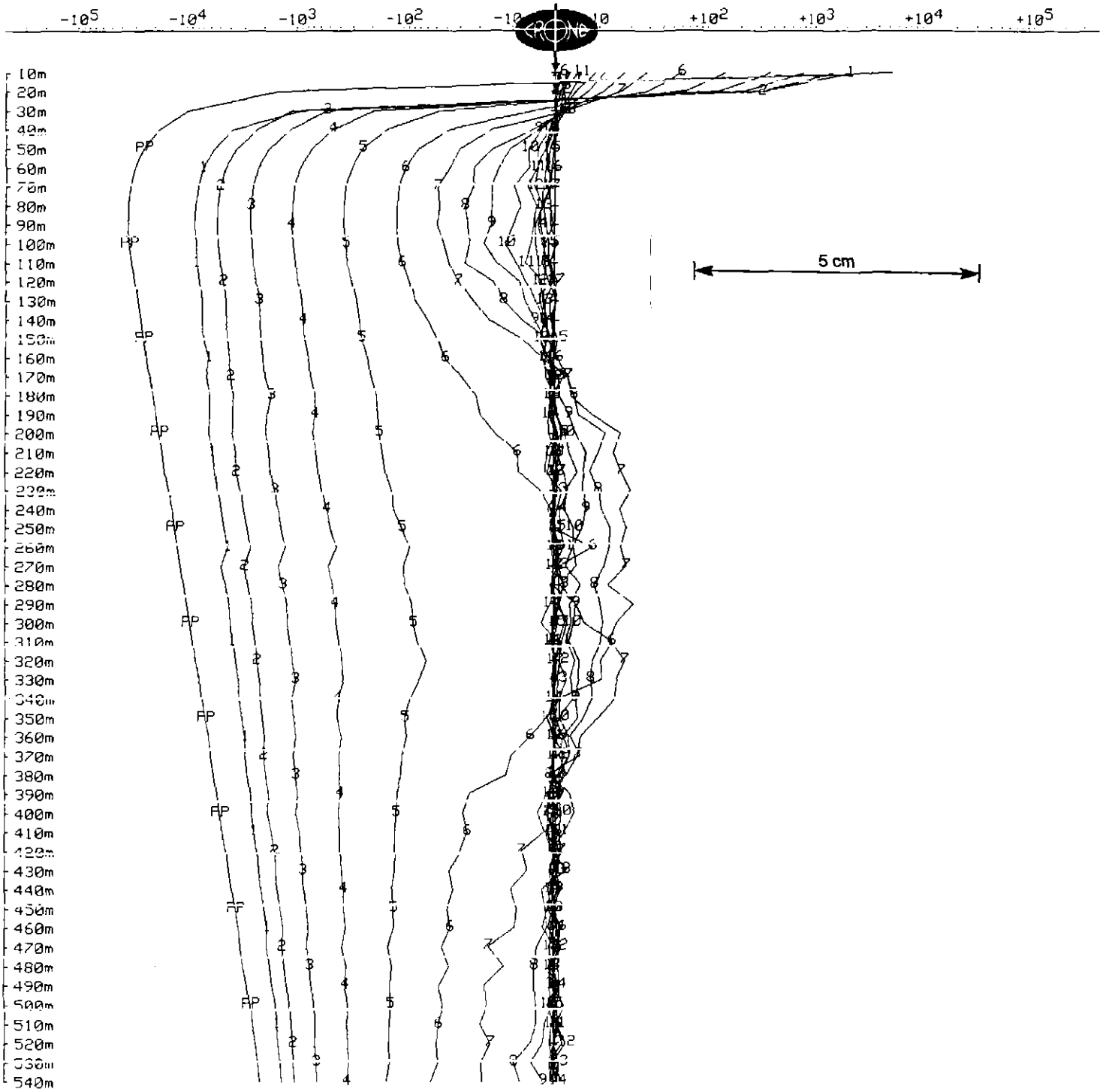
645467

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:3000



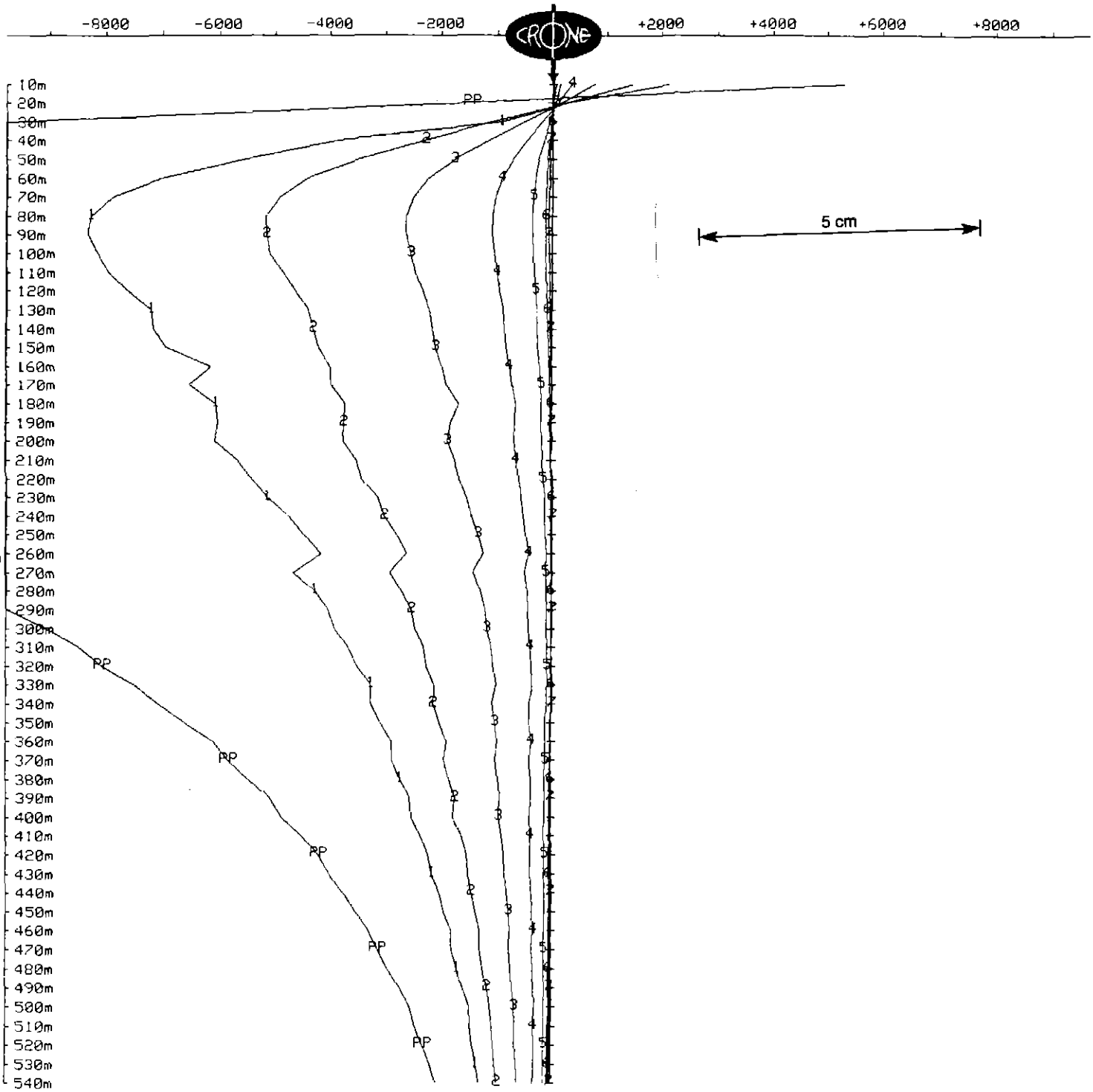
645468

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 17 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT/s



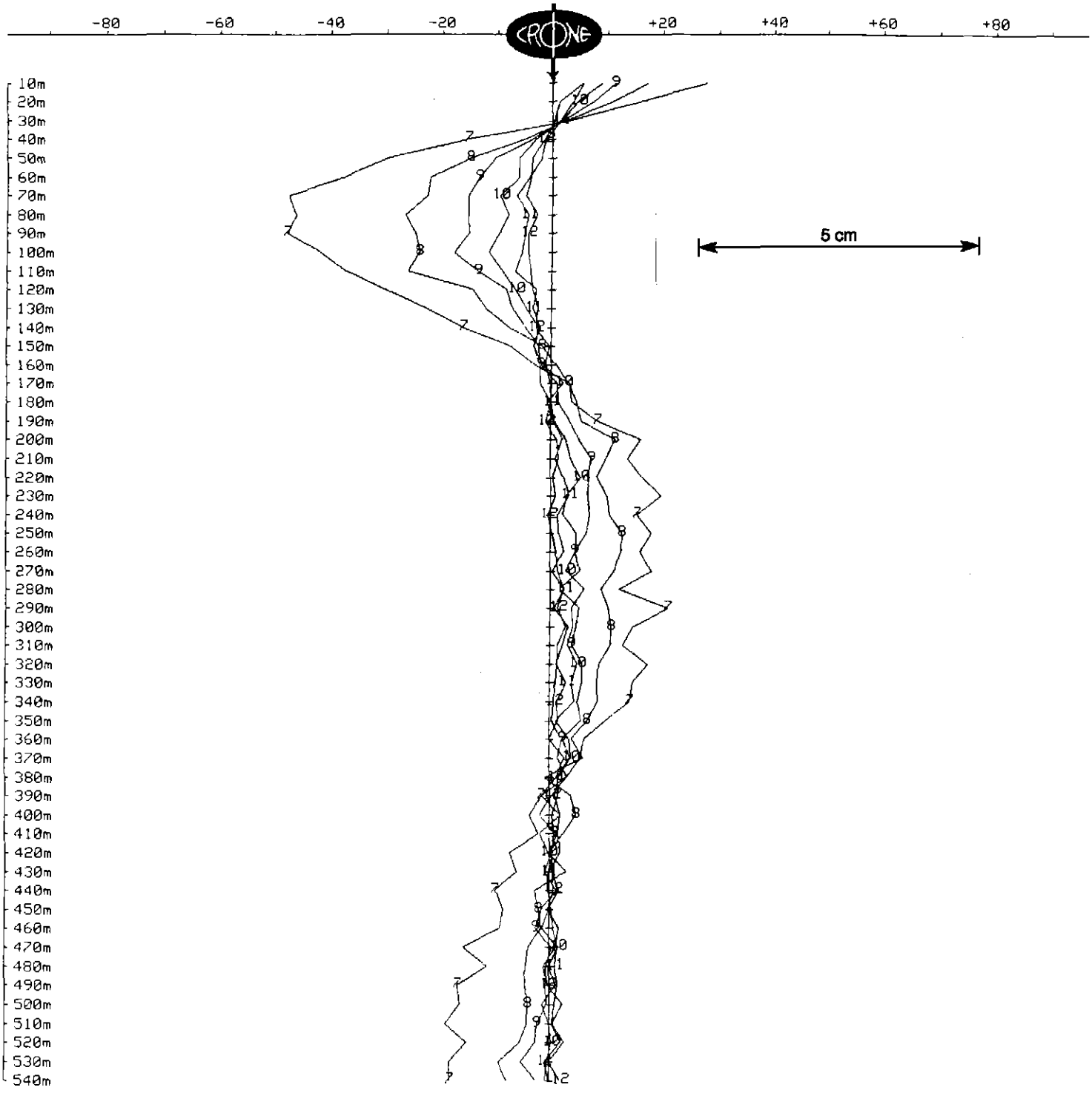
645469

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 10 nT/s



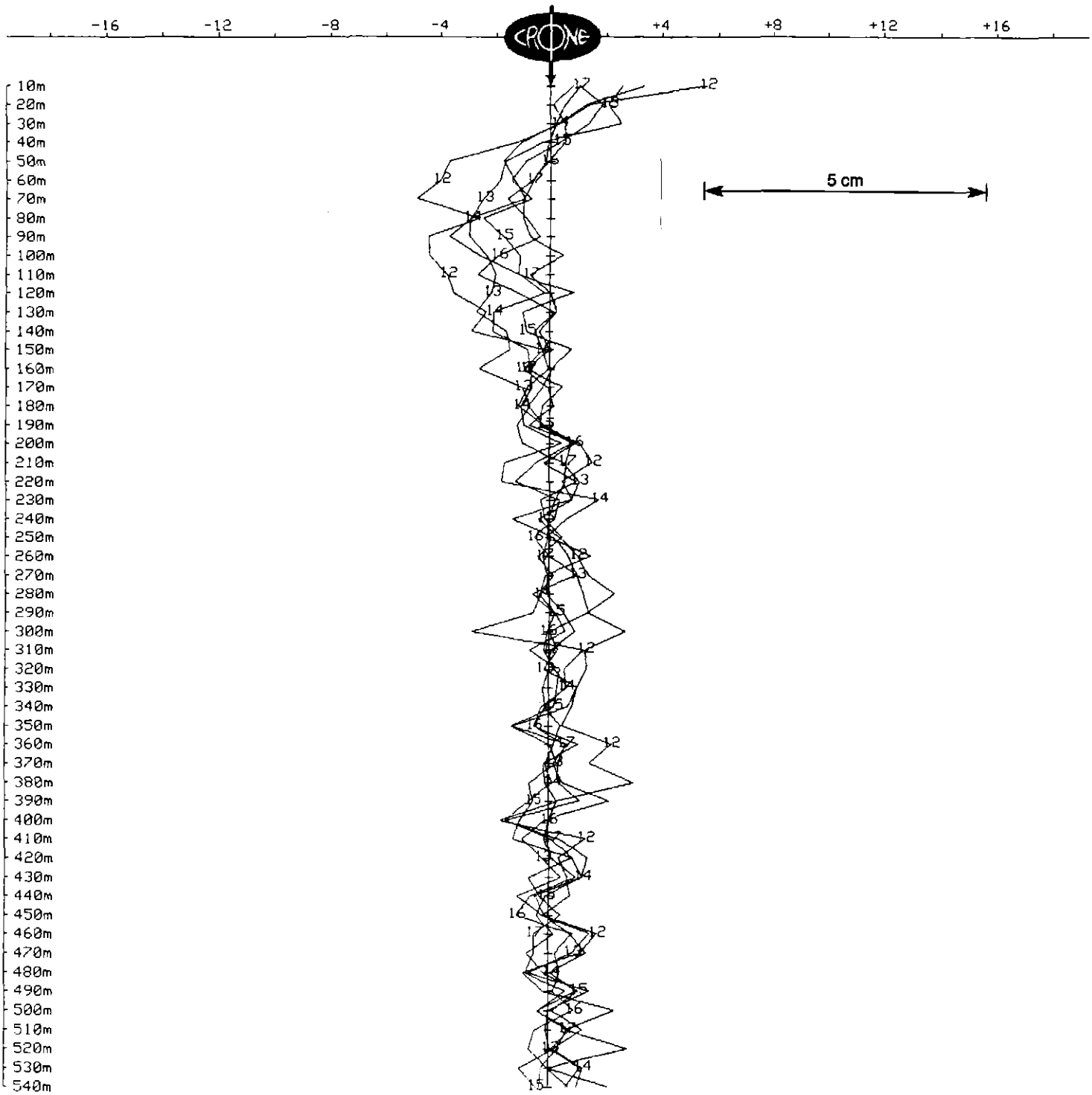
645470

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/s



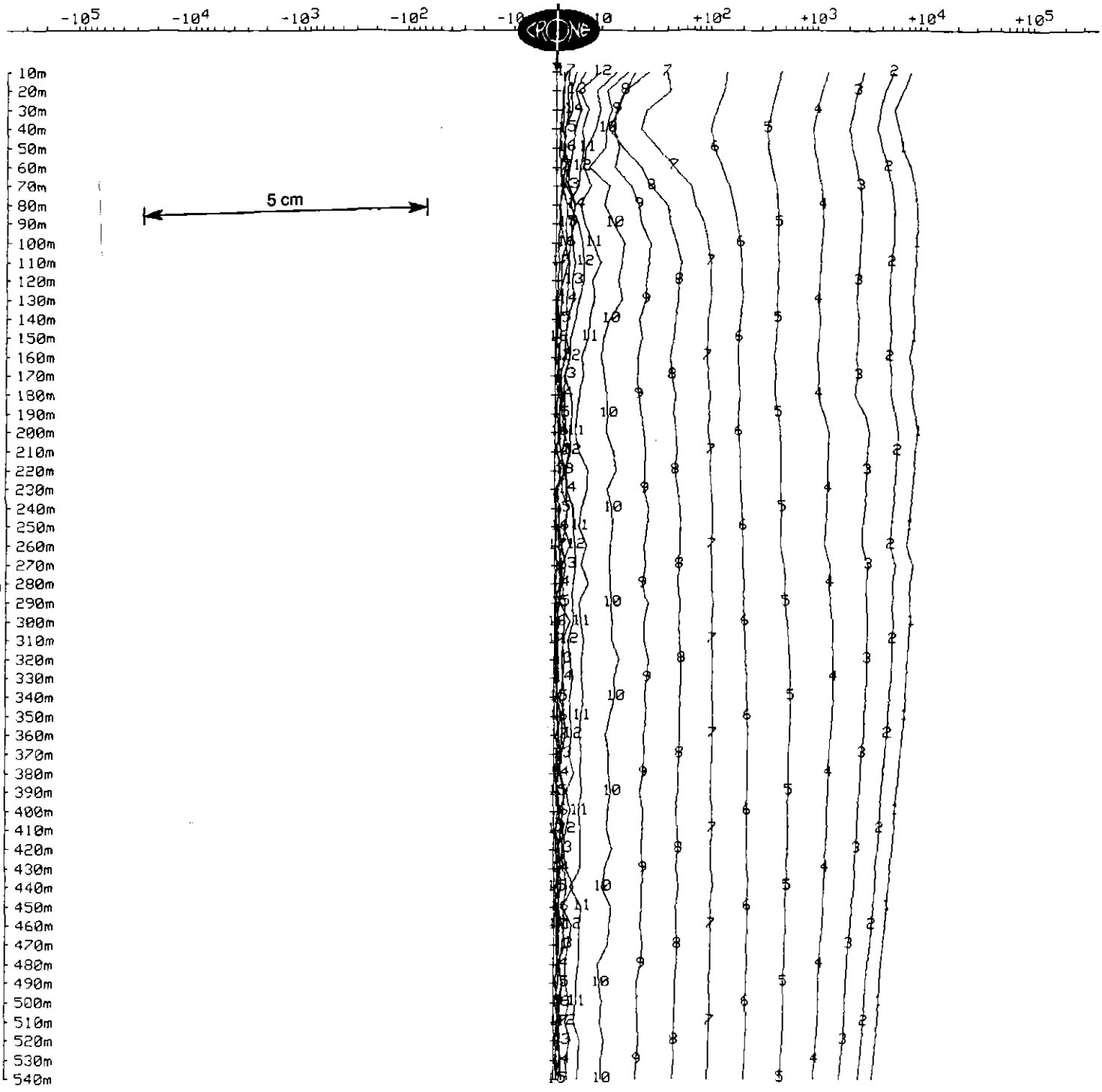
645471

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-07
Grid	: Beatrice	Tx Loop	: #BEM4
Date	: Jul 27, 1999	File name	: MS74XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 17 of 17 channels

Scale: 1:3000



645472

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9Z.PEM
Time Base	: 10.00 ms	# Readings	: 39
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 17	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 350m X 600m	Receiver	: Digital #109
Current	: 7 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)
1. 385020m, 5.34871e+06m, 990m 2. 384718m, 5.3482e+06m, 870m
3. 385161m, 5.34792e+06m, 820m 4. 385310m, 5.34855e+06m, 1045m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)
1. 385110m, 5.34826e+06m, 955m 2. 290deg, 65deg, 388m

Channel Times (usec)

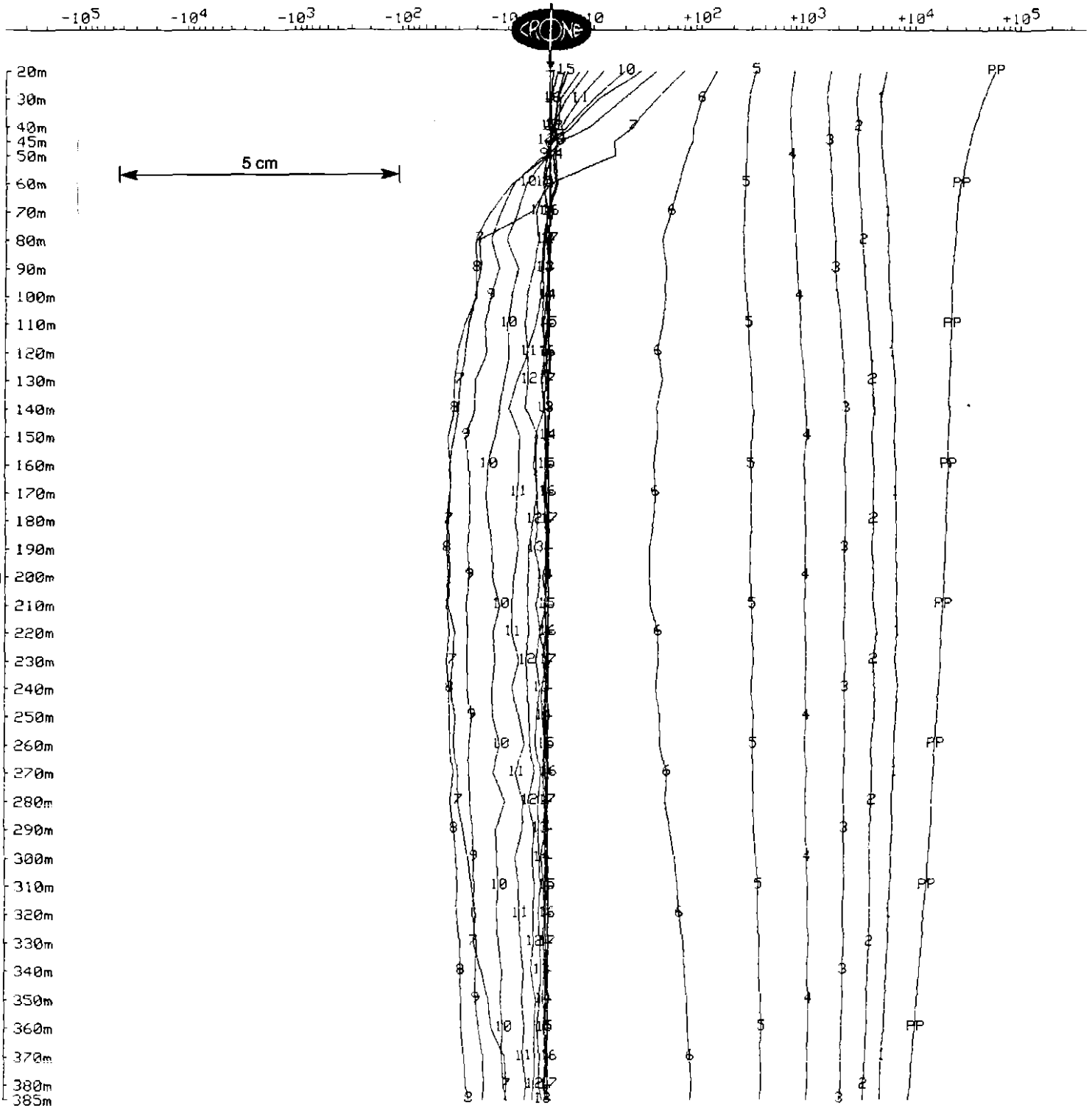
Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	63	56	2	63	86	74
3	86	112	99	4	112	153	133	5	153	203	178
6	203	270	236	7	270	360	315	8	360	482	421
9	482	639	560	10	639	850	745	11	850	1129	990
12	1129	1498	1314	13	1498	1993	1746	14	1993	2646	2320
15	2646	3514	3080	16	3514	4666	4090	17	4666	6192	5429

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:2000



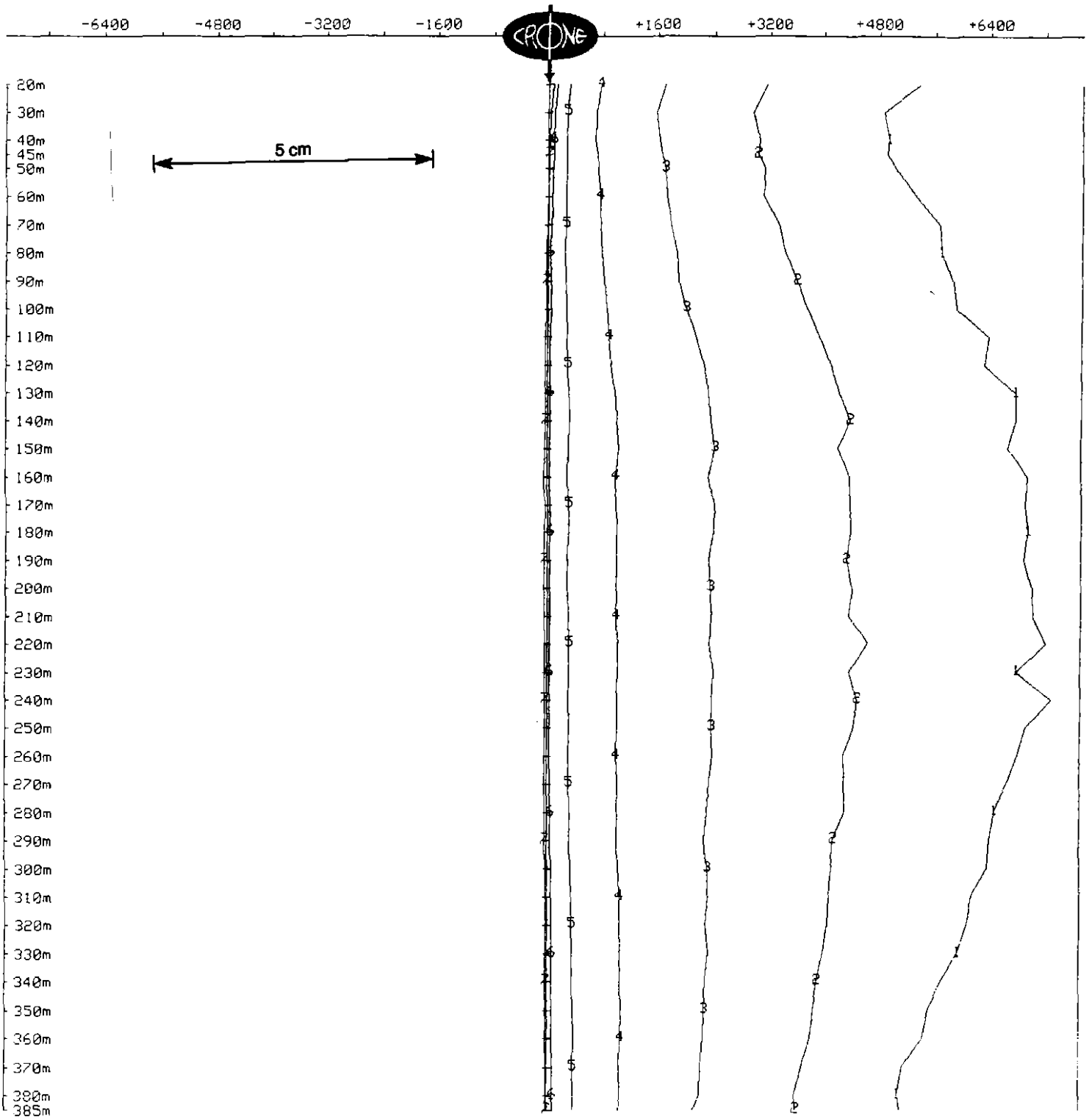
645474

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 17 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 800 nT/s



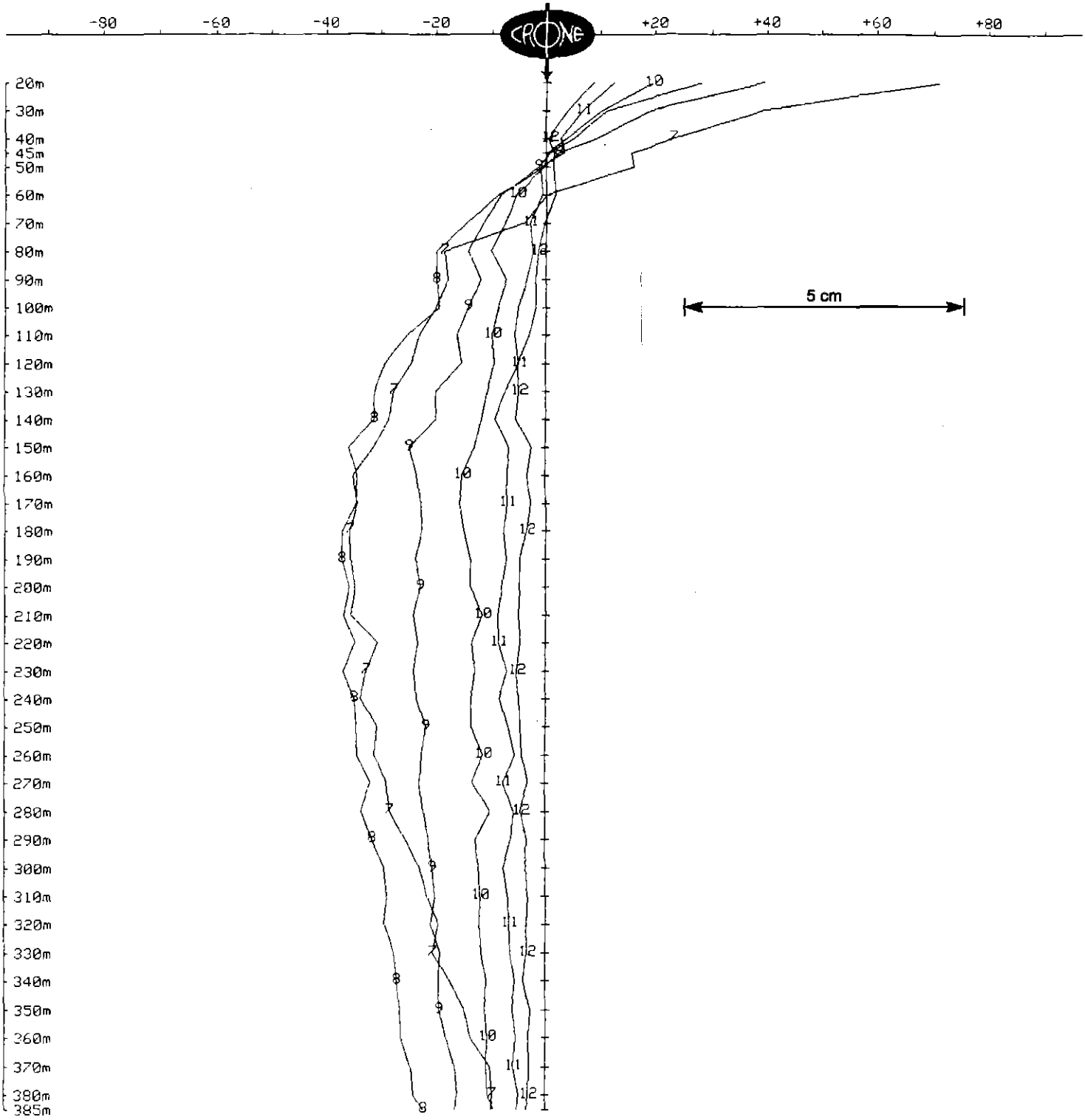
645475

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:2000 Unit Scale: 1cm = 10 nT/s



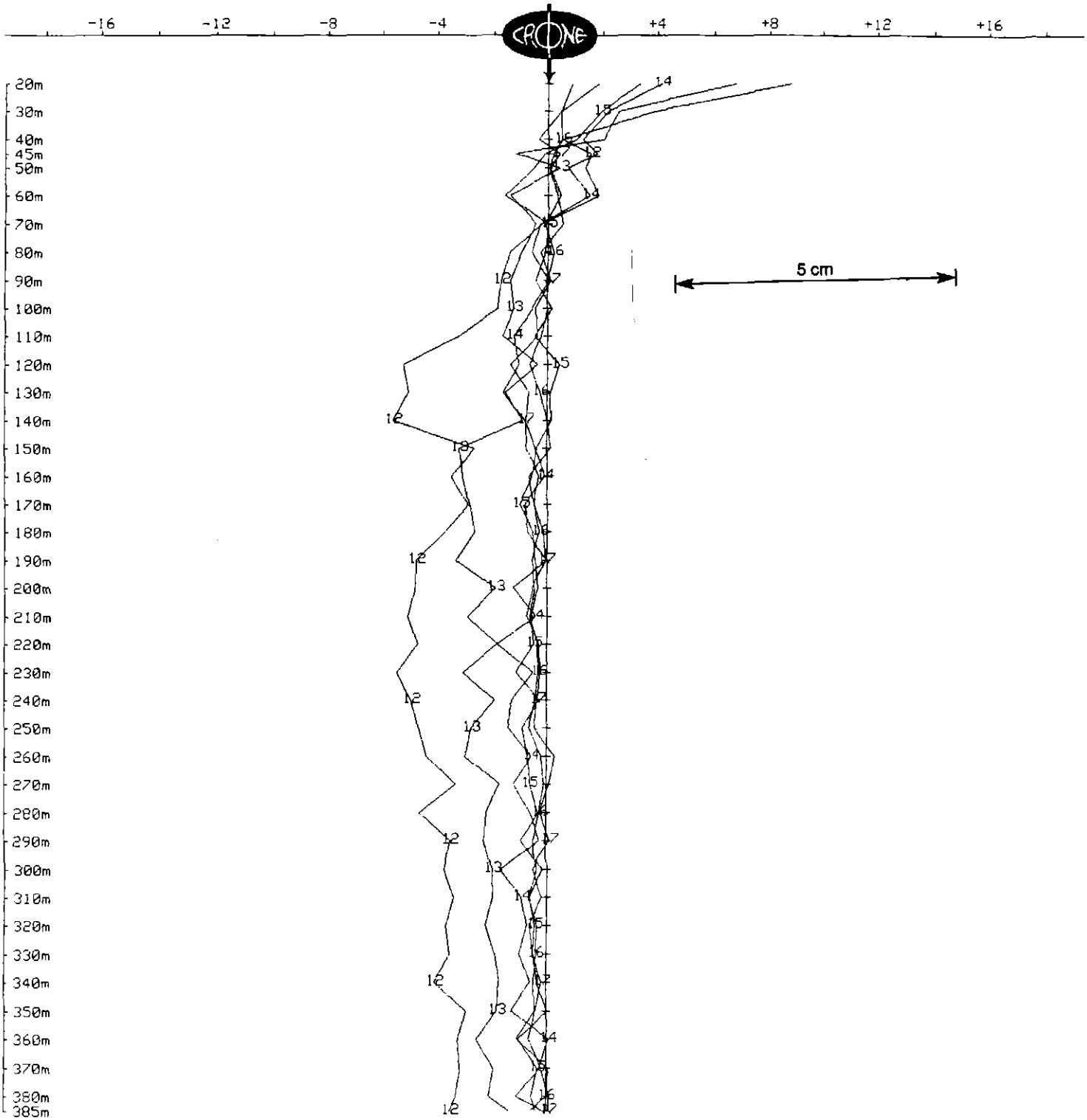
645476

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT/s



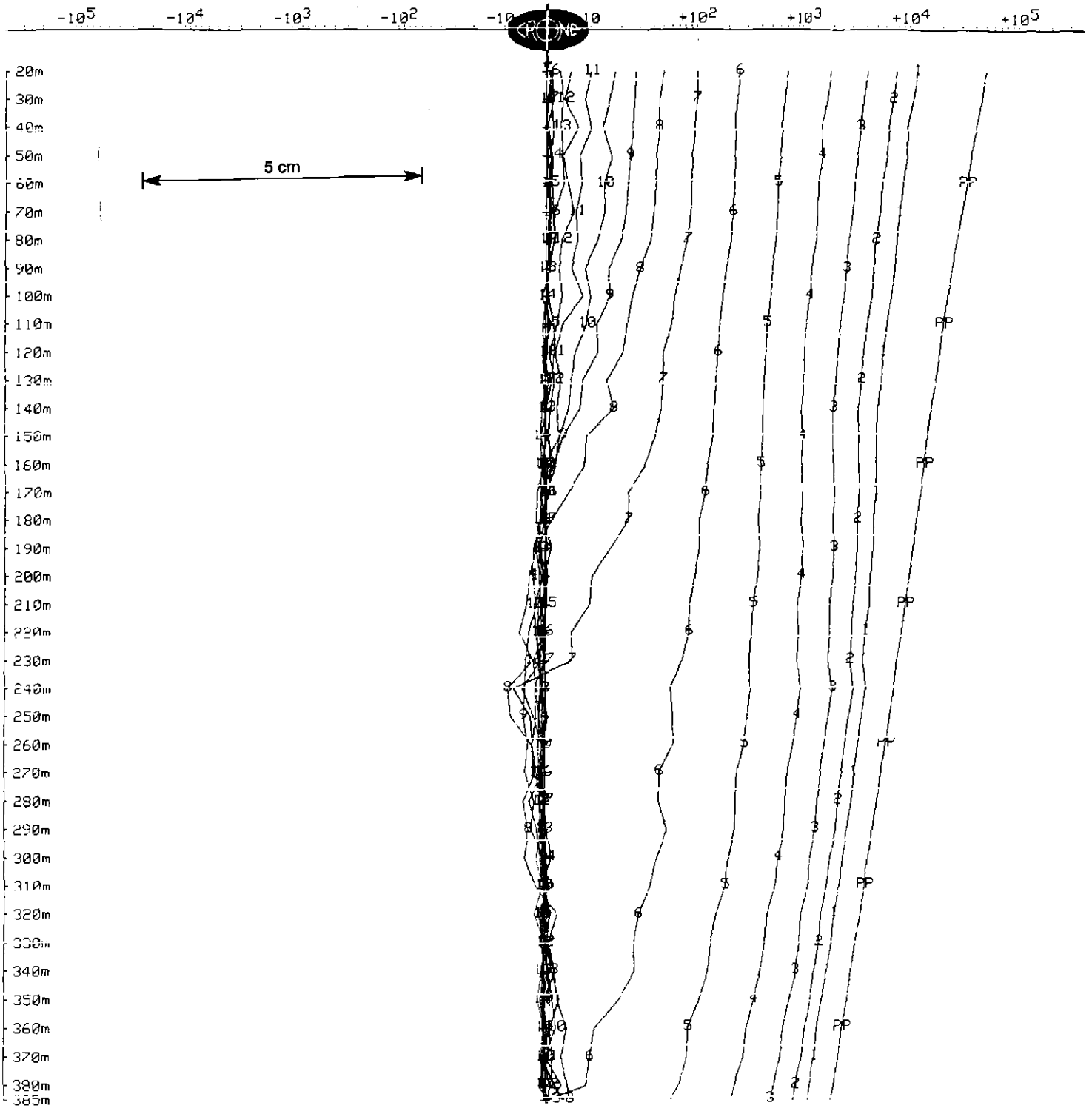
645477

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:2000



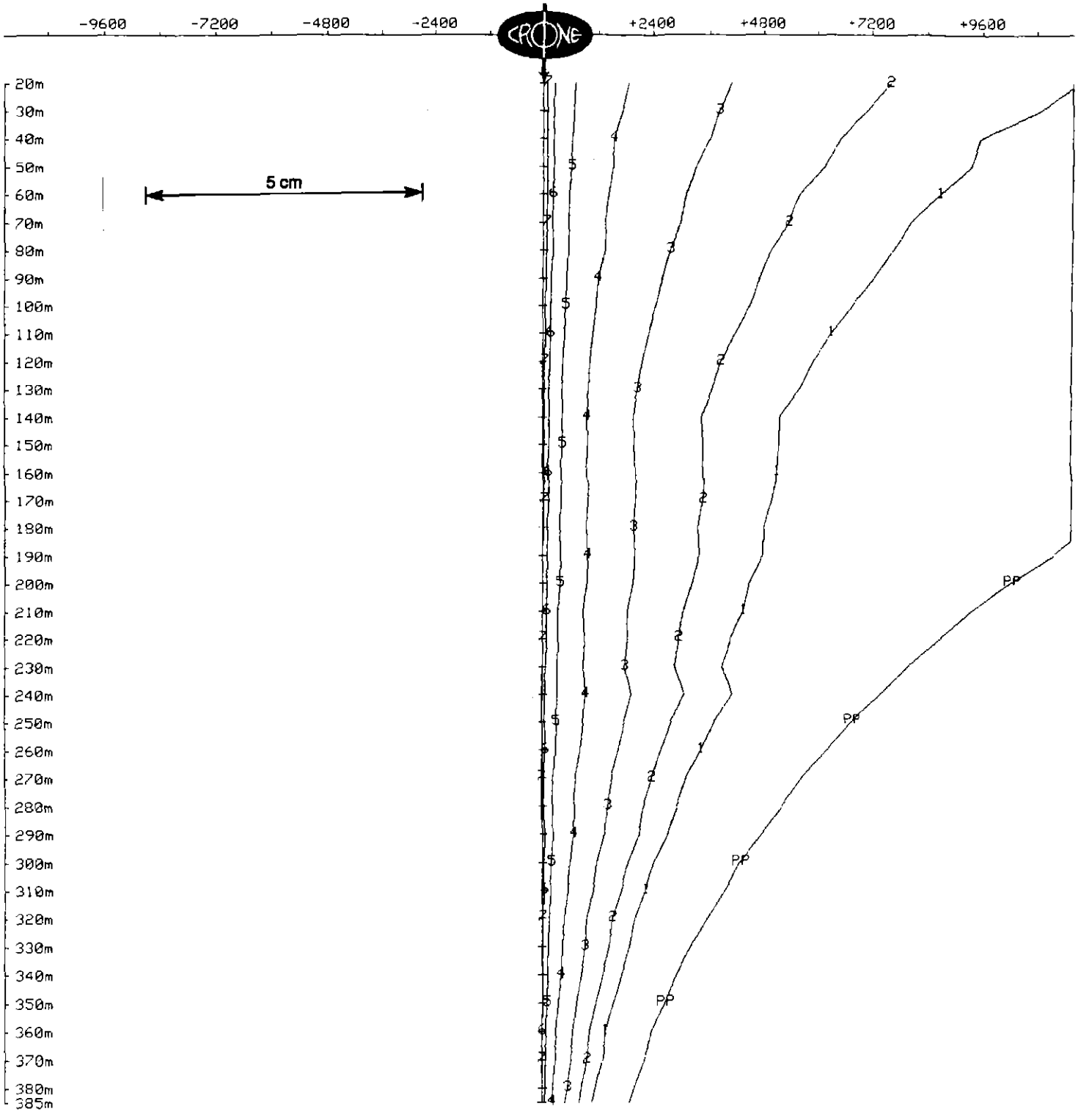
645478

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 7 of 17 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 1200 nT/s



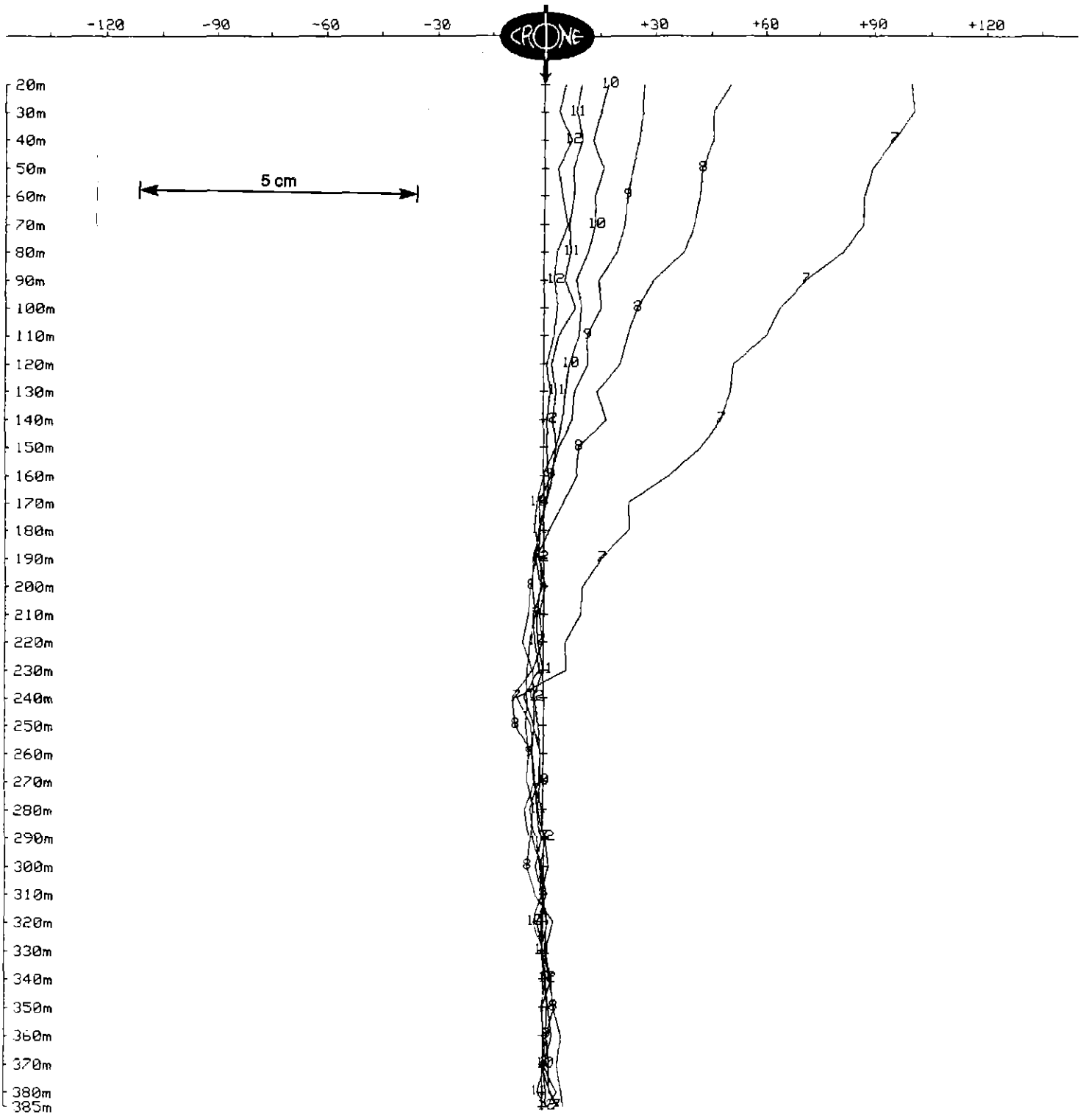
645479

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:2000 Unit Scale: 1cm = 15 nT/s



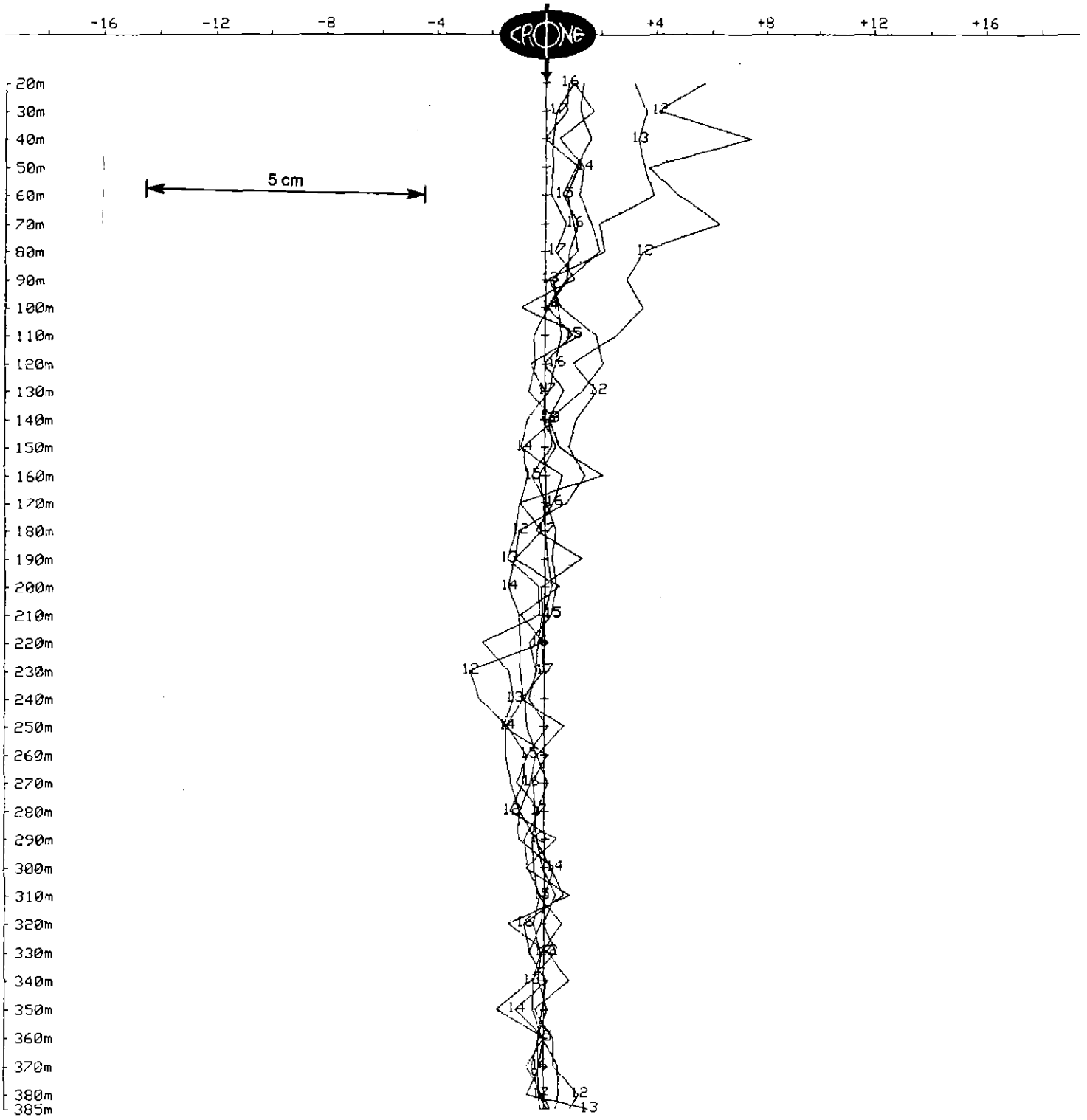
645480

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
X COMPONENT dBx/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT/s



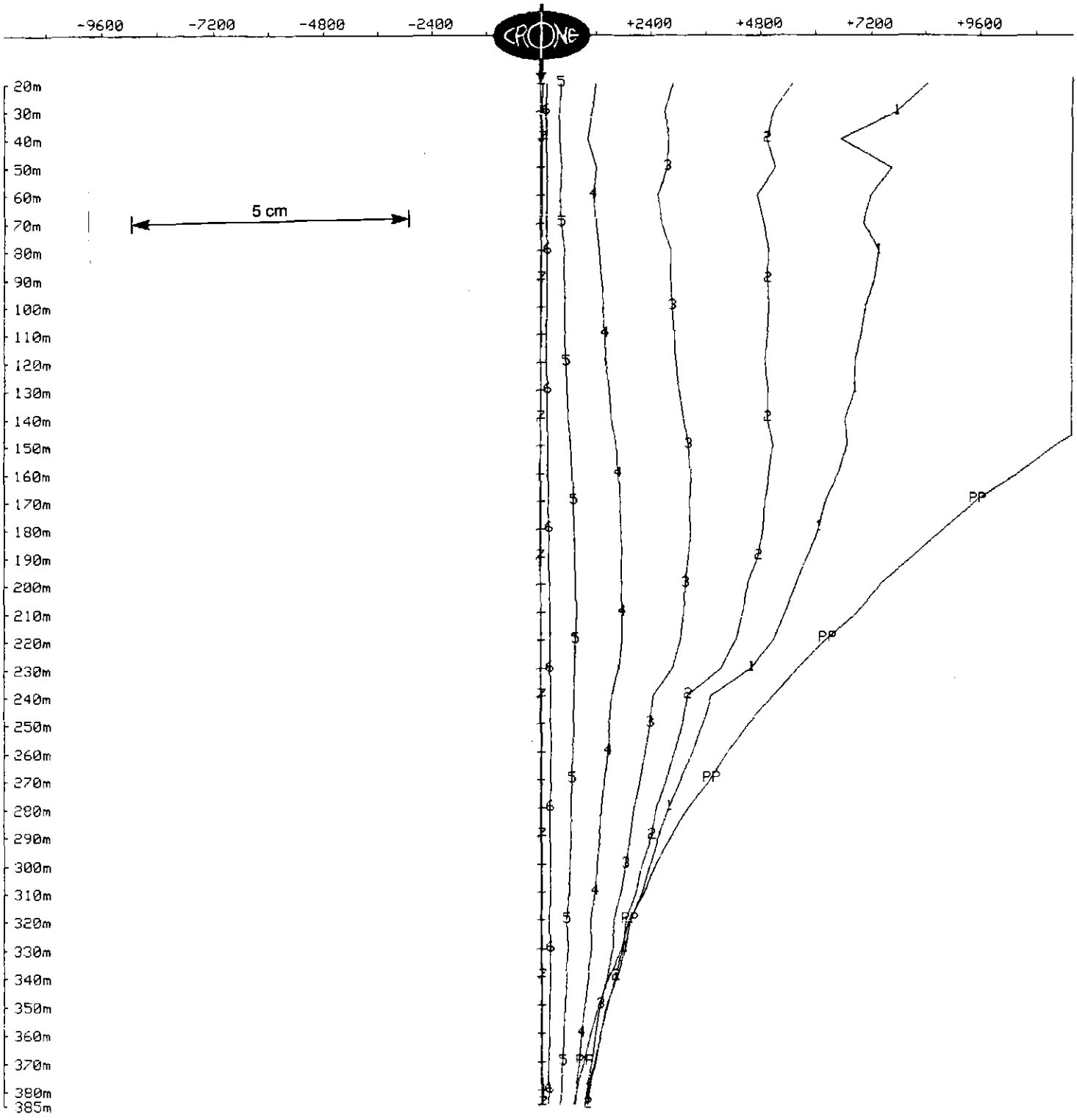
645431

OUTER RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 17 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 1200 nT/s



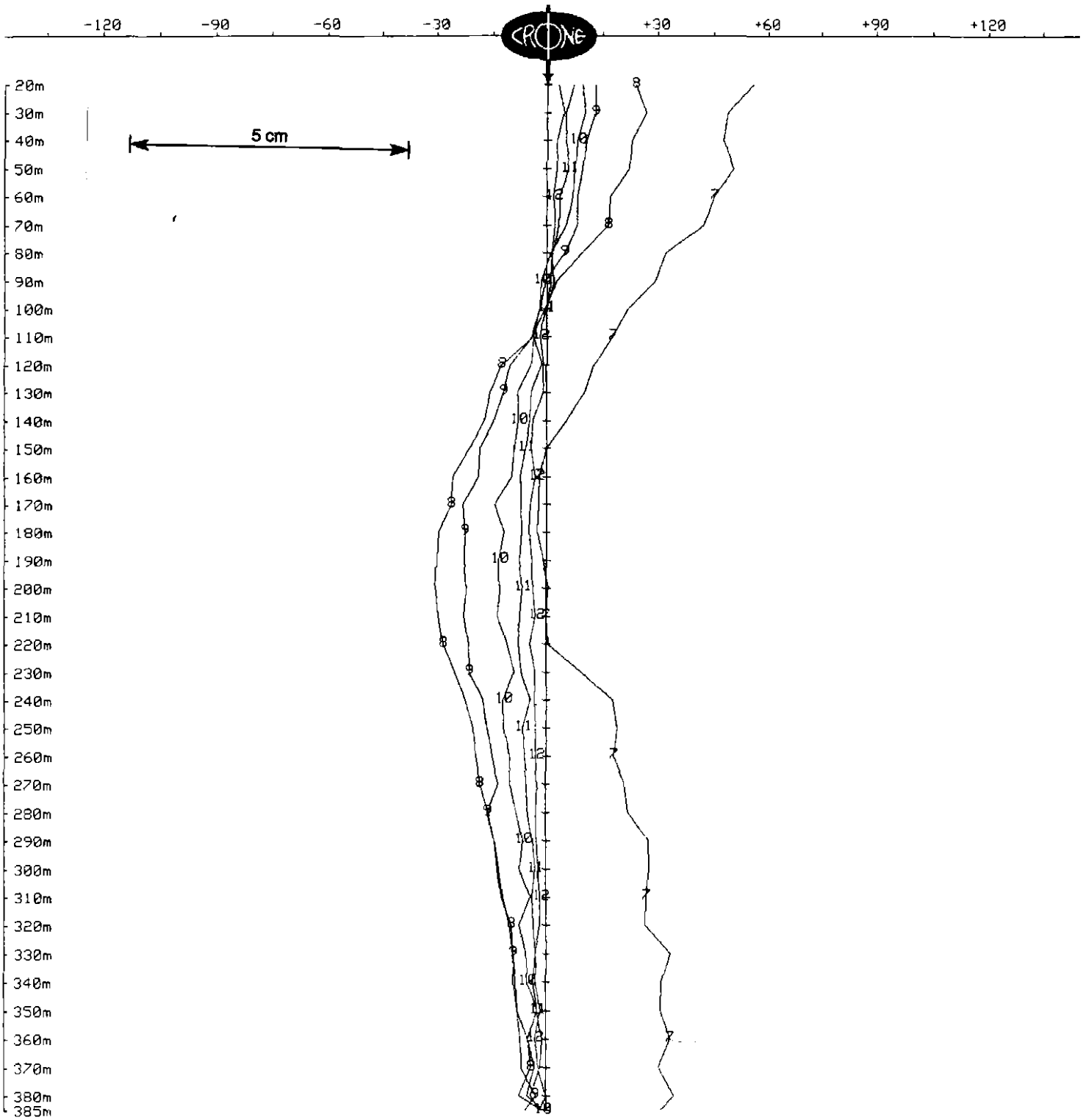
645432

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:2000 Unit Scale: 1cm = 15 nT/s



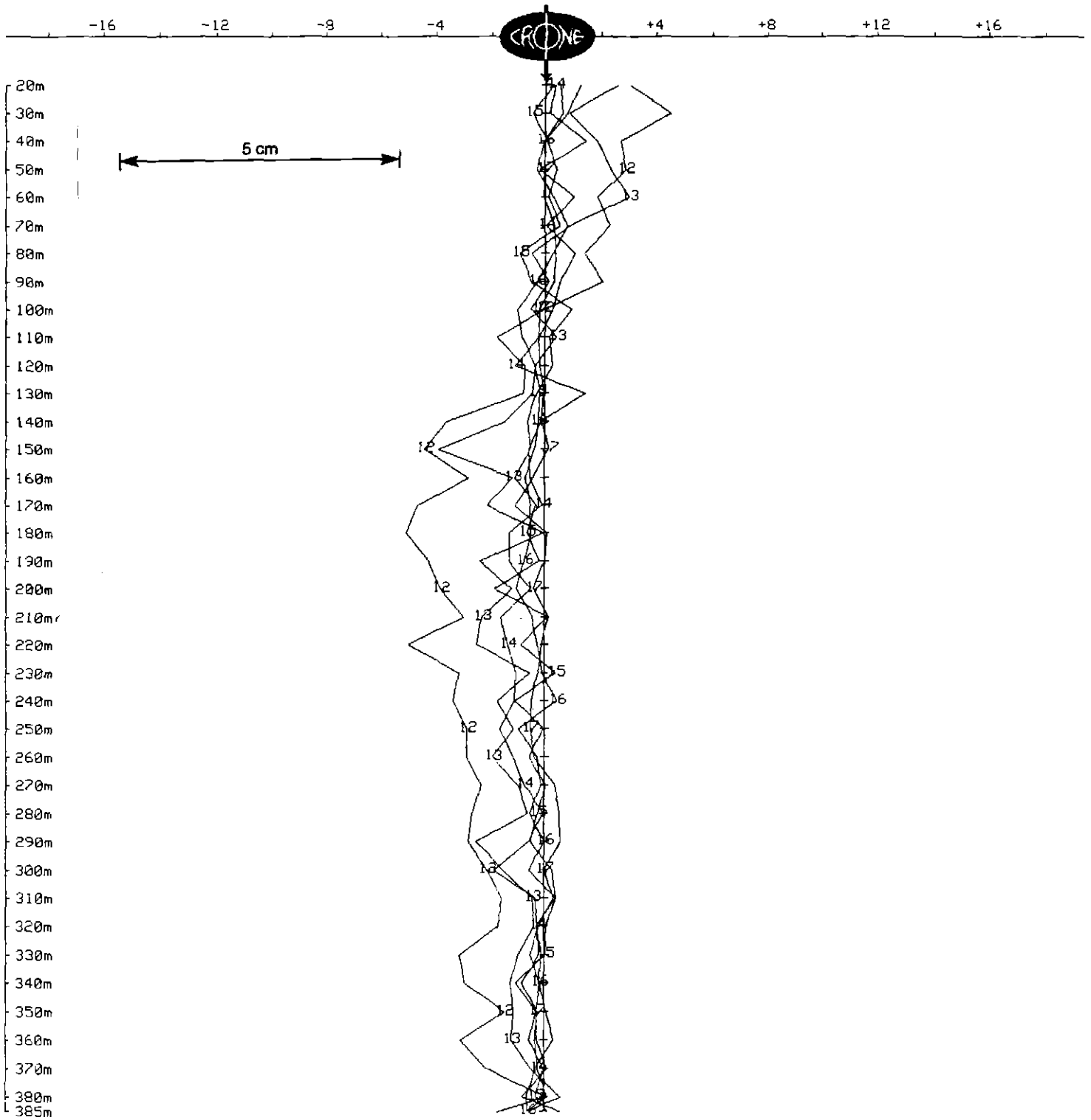
645483

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT/s



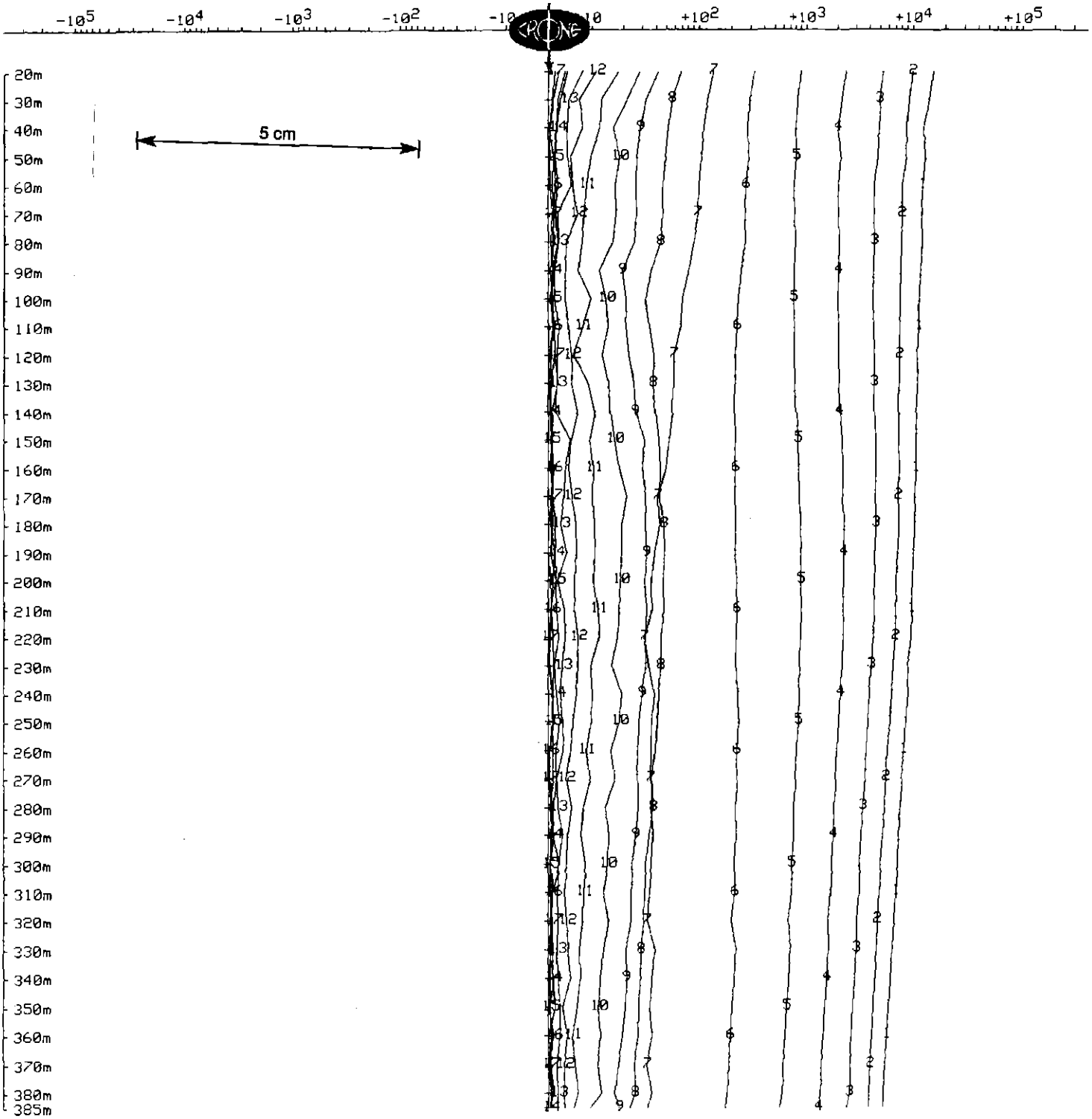
645434

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-09
Grid	: Beatrice	Tx Loop	: #BEM1
Date	: Jul 27, 1999	File name	: MS9XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 17 of 17 channels

Scale: 1:2000



645485

APPENDIX 9

BEATRICE PROSPECT

Interpretation of Downhole Electromagnetic Data on

MS8 at the Beatrice Prospect,

September 1999, C. Dauth

PASMINCO EXPLORATION

MODELLING AND INTERPRETATION OF DOWNHOLE ELECTROMAGNETIC DATA ON MS08 AT THE BEATRICE PROSPECT MAY 1999

EL 6/98

Author: Chris Dauth

Date: May 1999

Submitted To: B Murphy

Copies To: Pasminco Exploration, Melbourne

Submitted By:

Accepted By:

Melbourne Report No: VC 246

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LIST OF FIGURES

LIST OF PLANS

1. SUMMARY

During May 1999 down-hole electromagnetic data (DHEM) using the CRONE PEM system were acquired on diamond drill-hole MS08 at the Beatrice Prospect. The Beatrice Prospect is situated in Western Tasmania within EL 6/98 approximately 7 kilometres north of the town of Queenstown. Data were acquired by Outer-Rim Exploration Services using a PEM transmitter owned by Outer-Rim with the remainder of the DHEM system owned by Pasminco Exploration. Initial attempts to log the hole using the entire Pasminco system were abandoned due to a faulty PEM transmitter. Outer-Rim were then commissioned to complete the survey for Pasminco Exploration who are currently exploring the ground for Rosebery style Zn-Pb-Ag-Au mineralisation.

The aim of the DHEM survey was to delineate anomalous EM response that could be attributed to massive sulphide mineralisation for the purpose of defining further drill targets in the vicinity of drill-hole MS08. It is estimated that the DHEM technique would effectively explore within a 200 metre radius of the current drill-hole position. It must be considered that when reviewing this SUMMARY, and when applying the DHEM technique, that economic sulphide mineralisation may not necessarily provide a recognisable response (eg Hercules, Western Tasmania), and that some geological conditions provide anomalous EM response that is not associated with economic sulphide mineralisation (eg graphitic/pyritic black shales).

DHEM data were acquired in the time-domain using an impulse response (square-wave signal) CRONE PEM system. Data were acquired on 18 separate channels (including the "Primary Field" or PP measurement) on a 10 msec timebase. Three-component data were collected at 10 m and 20 m intervals for the entire length of the 798 m drill-hole. Axial component data were acquired at 10 m interval and cross-component data at 20 m interval. Two transmitter loops were used for the survey to allow for variations in coupling of a conceptual sub-surface conductor. Data are particularly noisy (not uncommon for Western Tasmania) and do not exhibit reasonable response past channel 12 (approximately 1.6 msec from cessation of the current ramp turn-off). A very interesting feature of the DHEM data is the lack of in-hole response coincident with intersections of the black shale units. This is encouraging in that it suggests the shales might not provide anomalous off-hole EM response as spurious anomalies. Given this information it must be considered that any off-hole response detected has a higher probability of being associated with sulphide mineralisation than the Itac Creek Shale (assuming homogeneity of the shale unit).

Data have been plotted using the ENCOM EMVISION software and modelled using the FILAMENT algorithm via a link through EMVISION. A subtle broad wavelength anomalous response was detected in the data from the transmitter loop to the east (BEM2) of the MS08 collar. The response is most apparent in the vertical cross-component (U) data, but also arguably evident in the axial (A) and horizontal cross-component (V). Modelling of the response using the FILAMENT algorithm suggests two possible source geometries.

1. A near-surface source striking N-S (grid) situated in the south-east corner of the

BEM2 loop dipping to the west. This position is coincident with the Itac Creek Fault and the Itac Creek Shale. The inverted ring filament providing a suitable fit between modelled and observed data has a radius in-excess of 100m and dips to the west with an eastern margin defined by the Itac Creek Fault. The fact that the transmitter loop side lies directly over the position of the Itac Creek Fault and adjacent Itac Creek Shales may have had the consequence of the high amplitude energising field near the loop causing local currents to be induced in the shale/and or fault. A current channelling response would have induced opposite polarity response to that detected hence it is inferred that the response must be inductive.

2. A source striking grid N-S situated off-section and parallel to the drill-hole MS08. An east dipping ring filament with a radius of approximately 150m situated 200m off-hole at a depth below surface of less than 200m provides a suitable match between the observed and modelled data. This model incorporates a "smoke-ring" effect into the modelled response in early channels.

Both models provide suitable geological settings. The match between observed and modelled data is better for the latter of the two proposed scenarios. In addition, comparison of surface gradient array IP data show evidence of a low resistivity zone coincident with the modelled EM response off-section from MS08 and dipping east. Available evidence and the better modelled fit must be considered to support the latter of the two proposed models.

Plotting the decay with time of the model and the raw data provides a time-constant (a parameter often used to describe the quality of a conductor) in the order of 0.4-0.5 msec. This is not particularly high, however an accumulation of sulphide minerals at the Beatrice Prospect might not be expected to form a good conductor due to the lack of significant pyrite that has been associated with mineralisation intersected to date.

Recommendations have been made to log drill-holes MS7 and MS9 (being drilled at the time of writing this report) with DHEM. Results from these two holes should provide suitable evidence to either discount the anomalous response detected in MS8 or to confirm the response and better define a position to drill test the anomaly. If the anomaly is confirmed by results from MS7 and/or MS9 then it should be drilled.

2. INTRODUCTION

The Beatrice Prospect is situated within EL6/98 approximately 7 km's north of the town of Queenstown in Western Tasmania. The ground is currently being explored by Pasminco Exploration for its potential to host Rosebery style Zn-Pb-Ag-Au mineralisation within Palaeozoic volcanics and volcaniclastic sediments of the Central Mt Read Volcanics. The region also has potential for Mt Lyell style Cu-Au mineralisation.

This report presents results of a down-hole electromagnetic (DHEM) survey on diamond drill-hole MS8 conducted by Outer Rim Exploration Services for Pasminco Exploration during May 1999. The aim of the DHEM survey was to delineate anomalous conductivity response that would be directly associated with massive sulphide mineralisation, and thus provide a target for further exploratory drilling.

3. LOCAL GEOLOGY AND PREVIOUS WORK

The Beatrice Prospect comprises a prospective horizon of the Cambrian Mt Read Volcanics at the top of the Central Volcanic Complex (CVC). The CVC comprises predominantly felsic volcanics and volcaniclastics and is typically overlain by a sequence of shales, siltstones, and sandstones. It is conceptual that this contact provides a focus for mineralisation either by acting as a fluid trap and favourable geochemical position via the overlying shales, or as the sea-floor position for Koroko style VHMS mineralisation deposited during a period of quiescence. A quartz-feldspar porphyry has intruded possibly as a sill along this contact and is a prominent feature of the local geology (the Mt Sedgewick Porphyry). The Ordovician Owen Conglomerate forms topographic ridges and scree slopes that abut onto the prospective ground. Remnants of eroded Permian sediments as horizontal layered clay/silt/sand beds are also evident in the region.

The simplified local geology comprises a gently folded to steeply dipping north-south striking black shale horizon situated at the contact between overlying porphyry and underlying volcaniclastic and felsic volcanic units. Locally the black shale is intercalated with both the overlying porphyry and the underlying ashy volcanics. The black shale outcrops along a fault expressed as a present day drainage (Itac Creek) and is interpreted to dip steeply to the west and then gently fold to form an anticline in the west underlying the Mt Sedgewick Porphyry. Minor Pb-Zn mineralisation is observed in outcrop and in drill intersections within the black shale and underlying siliclastics. The two areas with potential for further mineralisation are considered to be the steeply dipping shale in the Itac Creek and the extensions of this shale (and ashes-shales-ignimbrites) that underlie the Mt Sedgewick Porphyry to the West and East of Itac Creek.

Exploration to date has focused upon the black shale units that are situated strike parallel with the Itac Creek Fault.

Previous work has been summarised by Denwer (1998) in an unpublished report for Pasminco Exploration. This work is further summarised into point form as follows:

- Stream sediment sampling and geological mapping - 1975
- Establishment of over 40 km's of gridding - 1976-present
- 38 line km's of gradient array IP surveying - 1976
- Additional soil sampling - 1977-78
- Drilling MS1, MS2, and MS3 - 1978
- EIP, DHIP, dipole-dipole, and pole-dipole IP geophysical surveys (SCINTREX) - 1978
- Drilling MS4, and MS5 - 1979
- Ground magnetics, gradient array IP, pole-dipole IP, dipole-dipole IP - 1979
- Fixed loop UTEM - 1989
- Drilling MS06 - 1996
- Drilling MS07, MS08, and MS09 - 1998-99

Drill-hole MS8 was completed at 798.7m and targeted at a geochemical anomaly on the prospective Itac Creek stratigraphy beneath the Mt Sedgewick quartz feldspar porphyry. A summary log from the drill-hole follows (taken from the Pasminco April 1999 Internal Monthly Report):

MS08 Summary Log:

From	To	
0.0	191.8	Quartz feldspar porphyry.
191.8	197.8	Volcaniclastic sandstone and shale.
197.8	292.9	Quartz feldspar porphyry.
292.9	306.2	Intercalated black shale and quartz feldspar porphyry
306.2	318.2	Black shale
318.2	344.2	Intercalated black shale and quartz feldspar porphyry (peperitic contacts)
344.2	373.7	Black shale and minor sandstone; major fault zones at 360.1-364m and 371.6-373.7m; Sphalerite-rich mineralisation in lower 2m of unit.
373.7	447.3	Quartz feldspar porphyry. Strongly Sil-Co-Chl±Kfs veined with weak sphalerite>galena minerlaisation.
447.3	583.3	Black shale and minor siltstone/sandstone. Sphalerite> galena Mineralisation from 557 - 583.3m.
583.3	651.6	Quartz feldspar porphyry
651.6	665.4	Ash volcaniclastic and minor volcaniclastic sandstone. Generally 0.5-1.0% sphalerite, but, up to 5% sphalerite in matrix of sandstone units.
665.4	696.5	Volcaniclastic sandstones (pumiceous) with trace sphalerite.
696.5	787.3	Intercalated shale and volcaniclastic ash to sandstone units. Variable Py±Sp>Gn mineralisation; narrow intervals of up to 10% Sp (in sandstone beds) but generally <0.5% Sp.
787.3	798.7	Volcaniclastic sandstone/breccia with Sil+ Kfs/hem alteration. Only trace Py+Cpy.

4. SURVEY SPECIFICATIONS

The survey was initially attempted by Pasminco Exploration staff using the Pasminco CRONE PEM system. Problems were encountered with the PEM Transmitter early in the survey and Outer Rim Exploration Services were commissioned to complete the survey using a replacement transmitter coupled to the Pasminco system.

The survey specifications are tabulated below:

Date of Survey:	May 1999
Contractor:	Outer Rim Exploration Services
Survey Type:	DHEM
System:	CRONE PEM
No. of Drillholes:	1 (MS08)
Components:	Axial (A) and cross-components (U and V)
Station Spacing:	10m (A) and 20m (U and V)
Time Base:	10 msec
Channels:	18 including the PP field
Ramp Time:	500 µsec
Synchronisation:	Cable
Transmitter Size:	600m x 400m
Current:	4.3 Amps

The method of data noise and repeatability control was as follows:

- Three readings were taken at every station and compared for repeatability. Additional readings were taken as required.

Two transmitter loop positions were utilised. For reference within the text of this report these have been labelled BEM1 (western loop) and BEM2 (eastern loop). The location of these loops is presented in Figure 1. Corner coordinates in local and AMG grid are provided on Figure 1. Down-hole survey details are provided below:

MS08 Collar East: 385110 North: 5348260 RL:955.0

Azimuth	Dip	Distance
111.0	60.0	29
112.0	60.5	71
115.0	60.5	50
116.5	60.5	150
118.0	60.8	50
118.0	60.5	50
121.0	60.3	150
120.0	60.0	107
120.0	60.0	141

Time gates utilised by the CRONE PEM system are tabulated below (msec after ramp cessation):

CHANNEL	DELAY	WIDTH
1 (PP)	-0.198	0.1
2	0.08999	0.02701
3	0.11705	0.02710
4	0.15090	0.04060
5	0.19820	0.05400
6	0.25885	0.06730
7	0.33525	0.08550
8	0.43425	0.11250
9	0.56470	0.14840
10	0.73345	0.18910
11	0.95150	0.24700
12	1.23500	0.32000
13	1.60200	0.41400
14	2.07850	0.53900
15	2.69700	0.69800
16	3.49850	0.90500
17	4.53600	1.17000
18	5.88350	1.52500

5. MODELLING PARAMETERS

Data were modelled using the FILAMENT modeling software invoked through the EMVISION EM modelling and visualisation package. The FILAMENT software is capable of inversion of results to provide minimum error between observed and modelled data, however computer inversion can have the undesirable outcome of producing non-geologically feasible results due to the non-uniqueness of solution. It is for this reason that the software was used only in the forward modeling mode for modelling MS8.

6. DISCUSSION AND RESULTS

Stacked profiles of the down-hole response are presented in Plan 1 to Plan 6. Results from each loop are discussed separately and then summarised.

BEM 1

Early-time axial data (channels 1-5) show a negative to positive cross-over down the hole. The negative peak is centred at 200m and the positive peak at 480m. The overall wavelength of this feature is in-excess of 500m and the decay is extremely rapid with time (the response has dissipated by channel 6 at 0.25 msec). Analysis of the U and V component data show a similar early-time response with U and V component data exhibiting a positive to negative cross-over down the hole. This early-time response can be explained as a current channelling effect through the thick black shale unit intersected from 447-583m. The cross-over in the V component is explained by either an oblique angle of intersection of the drill-hole with the shale or a northerly plunge. The U and A component data are easily explained with simple physics associated with the direction of current channelling (south to north).

Late-time data provide evidence of; a negative response in the A component centred at 460m; a broad positive response in the U component centred on 460m; and a positive response in the V centred on 440m. The amplitudes are very small and lie within the noise envelope (< $1nV/Am^2$) at channel 8-12. A possible explanation is a poorly coupled conductor off-section to the south of the drill-hole dipping to the east parallel to the interpreted position of the shale intersected at 447-583m and sub-parallel to the drill-hole. The response is not at all well defined and the causative body is not able to be modelled with a high degree of confidence.

BEM2

Data from the second transmitter loop do not show a corresponding early-time response to that seen with BEM1. This further confirms evidence of a current channelling source for the early-time anomaly observed with the BEM1 data (ie BEM2 is situated over the drill-hole and thus would not induce a current channelling response; if the response was inductive, then one would expect to see a response in data from BEM2).

Late-time data from BEM2 provide strong evidence for the existence of an off-hole inductive EM source. U component data from channel 7-12 (0.33-1.23msec) show a negative trough with a wavelength in-excess of 400m centred at 340m down-hole. The wavelength suggests a large causative body some distance (several hundred metres) off-hole. The polarity and location of the response suggests and inductive source rather than a current channelling source and thus provides an interesting target for further investigation. NB// Current channelling might relate only to resistivity contrasts and hence would give a response associated with moderately conductive shales in a very resistive porphyry. An inductive source suggests induced current flow in a conductor, requiring a large accumulation of conductive minerals.

Decay analysis was conducted on the data yielding a parameter known as a time-constant of 0.4-0.5 msec. The time-constant is a parameter often used to describe the quality of a conductor. The larger the time-constant the better the conductor (more conductive minerals and larger size). For reference, the time-constant of the Hellyer deposit was in the order of 2-3 msec. The fact that mineralisation intersected to date at the Beatrice Prospect is sphalerite rich (very low in conductive sulphides) can be used to make the assumption that a large accumulation of sulphides in that area would also be sphalerite rich, hence it would most likely have a poor quality EM response with a very low time-constant (if it could be seen at all, - eg Hercules).

Modelling of the EM data using the FILAMENT algorithm provides a suitable model fit between observed and modelled data with two geologically feasible solutions. These are described below:

1. A near-surface conductor striking N-S (grid) situated in the south-east corner of the BEM2 loop dipping to the west. This position is coincident with the Itac Creek Fault and the Itac Creek Shale. The inverted ring filament providing a suitable fit between modelled and observed data has a radius in-excess of 100m and dips to the west with an eastern margin defined by the Itac Creek Fault. The fact that the transmitter loop side lies directly over the position of the Itac Creek Fault and adjacent Itac Creek Shales may have had the consequence of the high amplitude energising field near the loop causing local currents to be induced in the shale/and or fault. FILAMENT modelling results from channel 12 (1.23 msec) are displayed in Figure 2. The ring filament used to describe the target has the following geometrical characteristics. The centre of this ring filament would provide the focus for any drill targeting to intersect the conductor.

East: -855E
North: 1615N
RL: 670mRL
Radius: 155m
Azimuth: 190 degrees from grid N (note on Figure 2 the azimuth is given as the dip direction ie 280 degrees).
Dip: 54 degrees to the west (note on Figure 2 the dip is given as an inclination from horizontal).

2. A source striking grid N-S situated off-section and parallel to the drill-hole MS08. An east dipping ring filament with a radius of approximately 150m situated 200m off-hole at a depth below surface of less than 200m provides a suitable match between the observed and modelled data. This model incorporates a "smoke-ring" effect into the modelled response in early channels. The "smoke-ring" is represented by the large ring filament deep below the drill-hole in Figure 3. FILAMENT modelling results from channel 8 (0.43 msec) are displayed in Figure 3. The ring filament used to describe the target has the following geometrical characteristics. The centre of this ring filament would provide the focus for any drill targeting to intersect the conductor.

East: -1100E
North: 1560N
RL: 675mRL

Radius: 155m
Azimuth: 166 degrees from grid N (note on Figure 3 the azimuth is given as the dip direction ie 76 degrees).
Dip: 36 degrees to the east (note on Figure 2 the dip is given as an inclination from horizontal).

Both models provide suitable geological settings. The match between observed and modelled data is better for the latter of the two proposed scenarios. In addition, comparison of surface gradient array IP data show evidence of a low resistivity zone coincident with the modelled EM response off-section from MS08 and dipping east. UTEM data acquired over the same position do not provide evidence for a shallow conductor. This discrepancy has not been resolved.

7. RECOMMENDATIONS

Evidence is provided for the presence of a sizeable inductive EM source situated to the south of drill-hole MS08. Drill-holes MS07 and MS09 (being drilled at the time of writing this report) should be logged with DHEM to determine whether support can be provided for the existence and modelled position of this delineated off-hole conductor. If the conductor is confirmed by results from MS07 and/or MS09 then it should be recommended to position a drill-hole to intersect the refined model position.

Data from MS08 were typically noisy (as experienced throughout much of Tasmania). The anomalous response detected from DHEM logging of MS08 was delineated largely from within the noise envelope. Future logging in the region should be conducted bearing this in mind. Practices that could facilitate better data quality are:

- Acquisition of a sample interval of 5m to allow along line spatial filtering of the EM response.
- Acquisition of 5 data samples (512 stacks) per station rather than 3.
- Application of a larger magnetic moment primary field by decreasing loop resistance with thicker transmitter loop wire.
- Application of a larger magnetic moment primary field by using a higher voltage output transmitter (240V).

8. KEYWORDS AND LOCALITY

Keywords

conductivity, down-hole, electromagnetics, orebody, pyrite, sphalerite, shale, sulphides

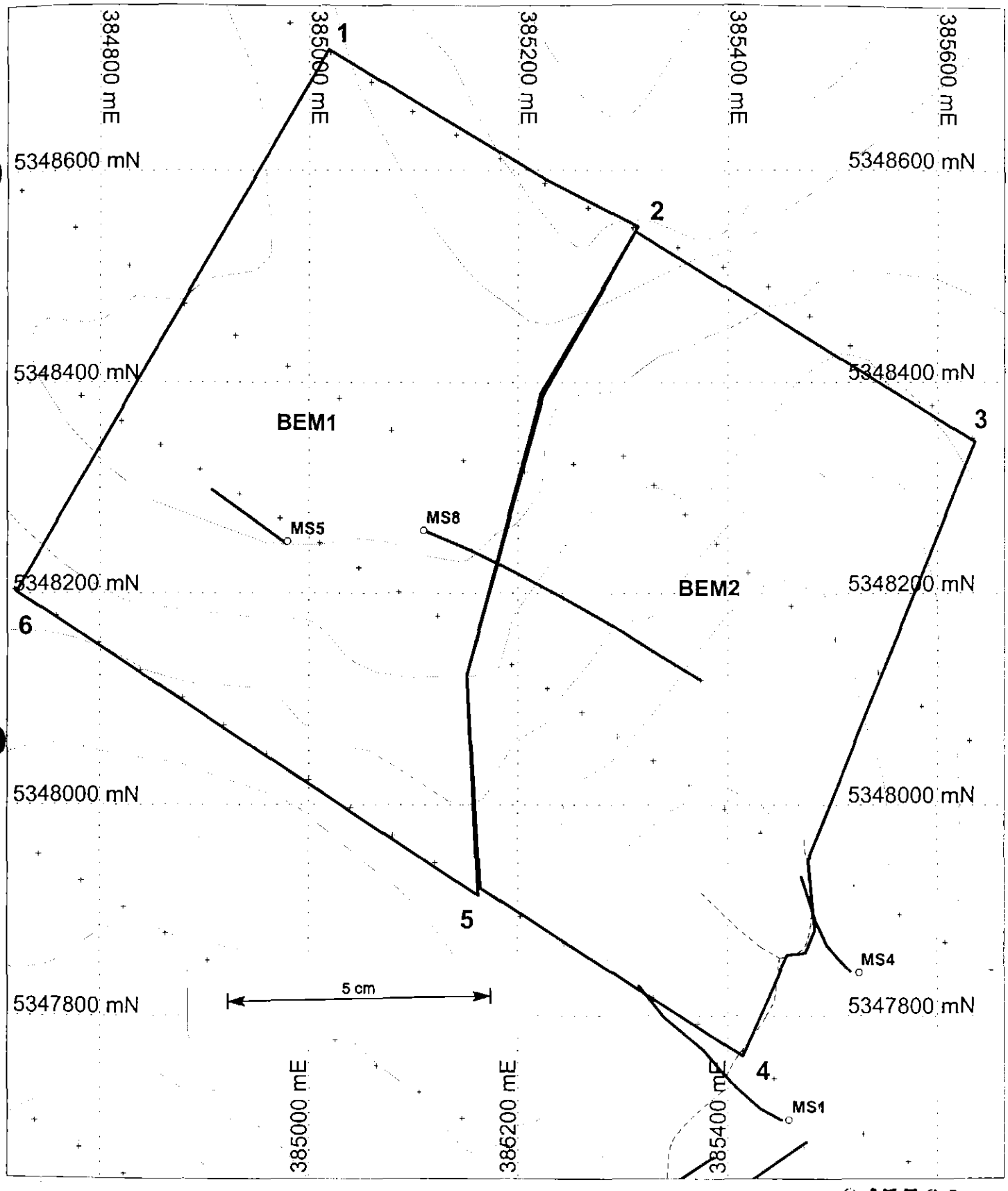
Locality

1:100K Sophia 8014

1:250K SK\55-SW Sheet

9. REFERENCES

Denwer, K. D., 1998, Beatrice Prospect Literature Review, In-house Technical Note for Pasminco Exploration, *not published*



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Transmitter Loop Details

Corner	East	North	EAMG	NAMG	RL
1.	-1700	2200	385020	5348712	990
2.	-1350	2200	385310	5348546	1045
3.	-950	2200	385632	5348347	910
4.	-800	1600	385414	5347766	740
5.	-1100	1600	385161	5347919	820
6.	-1650	1600	384718	5348205	870

Scale 1:5000

0 125 250

Metres

PASMINCO EXPLORATION

ETS Melbourne

TASMANIA

Date: 19 Apr 1999

Author: C Dauth

Office: ETS

Ref:

Scale: 1:5,000

Projection: SUTM55 AGD84

Figure: 1

BEATRICE PROSPECT
MS08 DHEM Loop Design

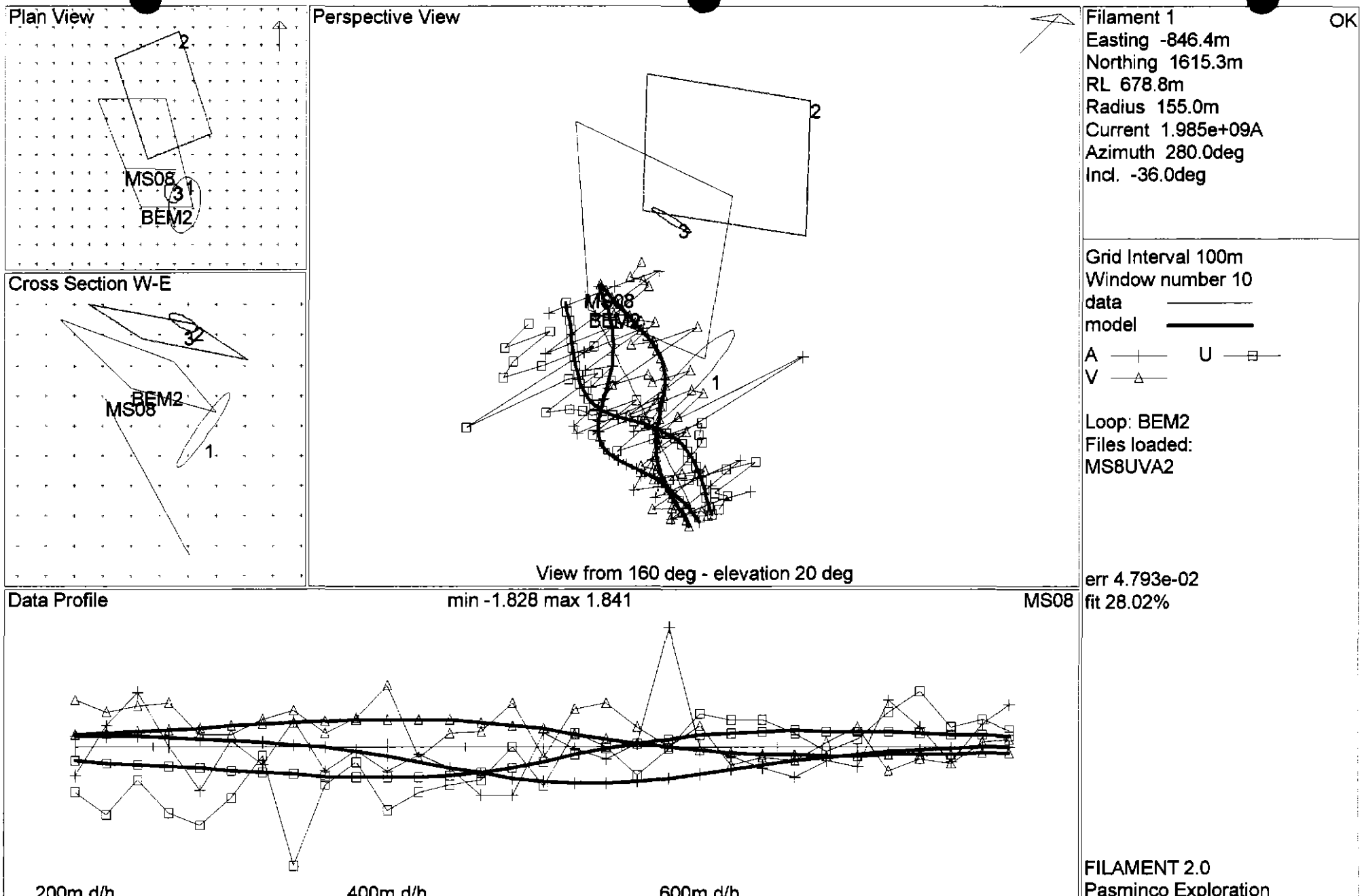

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Figure 2. MS08 DHEM Model 1

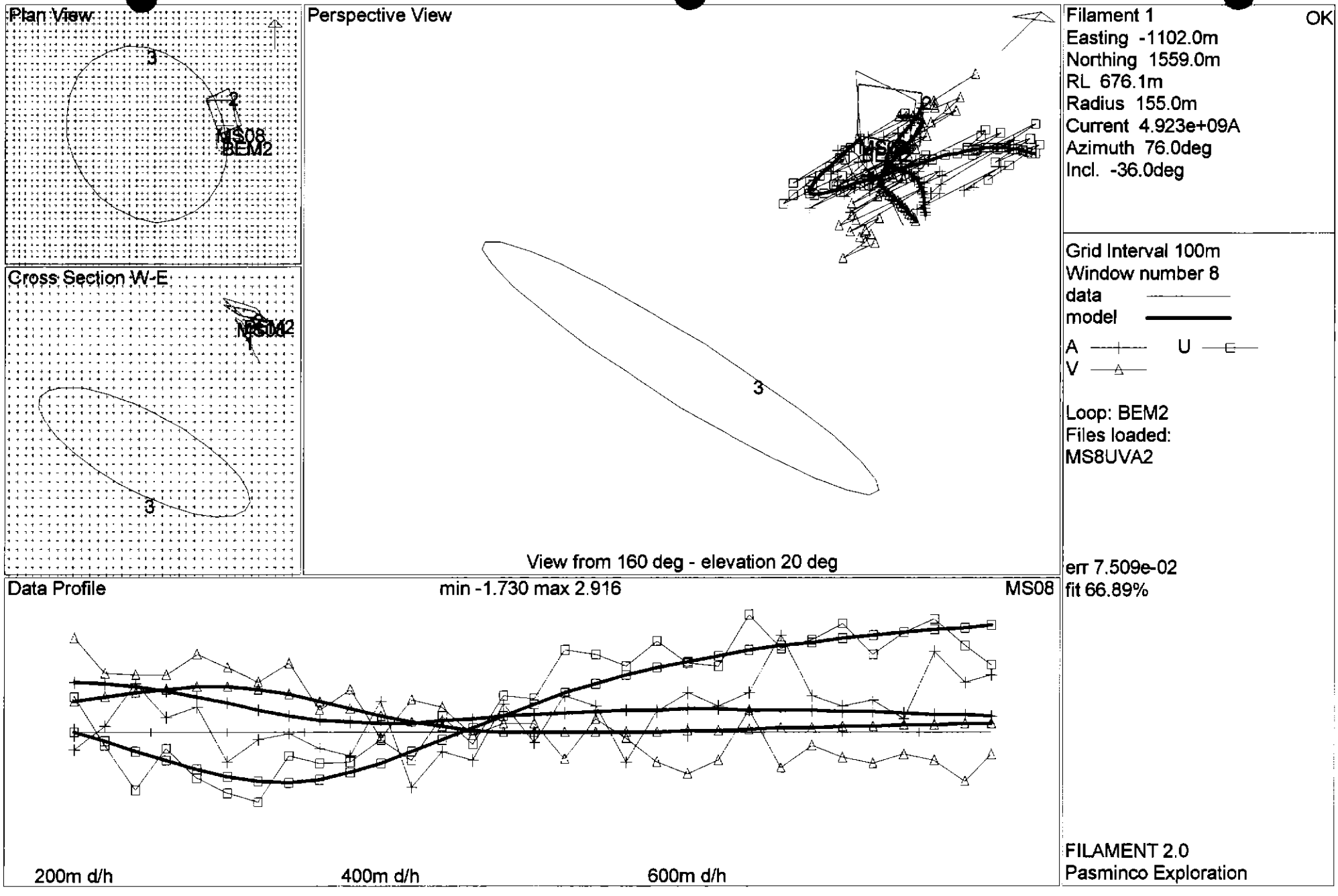

Figure 3. MS08 DHEM Model 2

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Channels 2-5 Linear

Channels 5-8 Linear

Channels 8-12 Linear

All Channels Log

5 cm

PASMINCO EXPLORATION

PLAN 1

TASMANIA
BEATRICE PROSPECT
Down-Hole EM Profiles
DRILLHOLE MS08
AXIAL COMPONENT (A)
TRANSMITTER LOOP BEM1

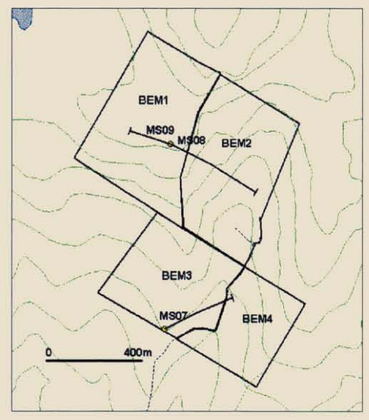
SURVEY DETAILS

Contractor: Outer Rim
Survey Date: May 1999
EM System: CRONE PEM
Hole: MS08
Time Base: 10 msec
Channels: 18 (including PP)
Ramp: 0.5 msec
Units: nV/A/m2
Rx Area: 6500 m2
Transmitter Area: 240,000 m2
Current: 4.3 A

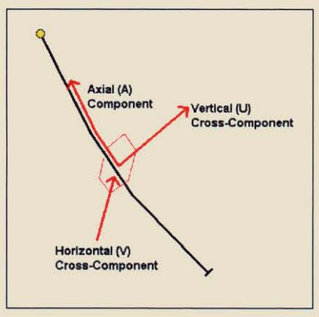
Horizontal Scale = 1:2500

PEM TIME WINDOWS
(msec after ramp cessation)

1. -0.198 (PP)
2. 0.090
3. 0.117
4. 0.151
5. 0.198
6. 0.25885
7. 0.33525
8. 0.43425
9. 0.56470
10. 0.73345
11. 0.95150
12. 1.23500
13. 1.60200
14. 2.07850
15. 2.69700
16. 3.49850
17. 4.53600
18. 5.88350



Transmitter Loop Layout



Coordinates Definition

Compiled by C Dauth 7/10/1999

Channels 2-5 Linear

Channels 5-8 Linear

Channels 8-12 Linear

All Channels Log

5 cm

PASMINCO EXPLORATION

PLAN 2

TASMANIA
BEATRICE PROSPECT
Down-Hole EM Profiles
DRILLHOLE MS08
U COMPONENT
TRANSMITTER LOOP BEM1

SURVEY DETAILS

Contractor: Outer Rim
Survey Date: May 1999
EM System: CRONE PEM
Hole: MS08
Time Base: 10 msec
Channels: 18 (including PP)
Ramp: 0.5 msec
Units: nV/A/m2
Rx Area: 6500 m2
Transmitter Area: 240,000 m2
Current: 4.3 A

Horizontal Scale = 1:2500

PEM TIME WINDOWS
(msec after ramp cessation)

1. -0.198 (PP)
2. 0.090
3. 0.117
4. 0.151
5. 0.198
6. 0.25885
7. 0.33525
8. 0.43425
9. 0.56470
10. 0.73345
11. 0.95150
12. 1.23500
13. 1.60200
14. 2.07850
15. 2.69700
16. 3.49850
17. 4.53600
18. 5.88350

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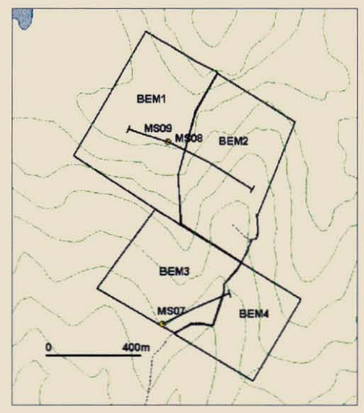
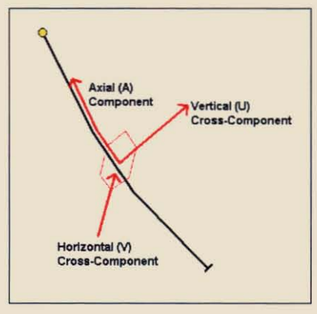
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL



Transmitter Loop Layout



Coordinates Definition

Compiled by C Dauth 7/10/1999

Channels 2-5 Linear

Channels 5-8 Linear

Channels 8-12 Linear

All Channels Log

5 cm

PASMINCO EXPLORATION

PLAN 3

TASMANIA
BEATRICE PROSPECT
Down-Hole EM Profiles
DRILLHOLE MS08
V COMPONENT
TRANSMITTER LOOP BEM1

SURVEY DETAILS

Contractor: Outer Rim
Survey Date: May 1999
EM System: CRONE PEM
Hole: MS08
Time Base: 10 msec
Channels: 18 (including PP)
Ramp: 0.5 msec
Units: nV/A/m2
Rx Area: 6500 m2
Transmitter Area: 240,000 m2
Current: 4.3 A

Horizontal Scale = 1:2500

PEM TIME WINDOWS
(msec after ramp cessation)

1. -0.198 (PP)
2. 0.090
3. 0.117
4. 0.151
5. 0.198
6. 0.25885
7. 0.33525
8. 0.43425
9. 0.56470
10. 0.73345
11. 0.95150
12. 1.23500
13. 1.60200
14. 2.07850
15. 2.69700
16. 3.49850
17. 4.53600
18. 5.88350

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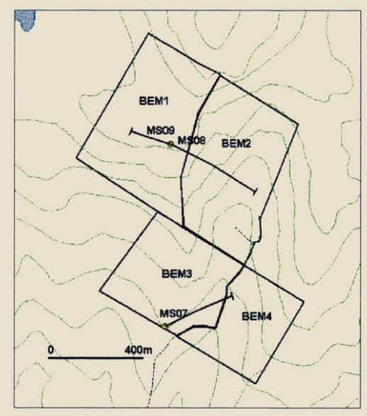
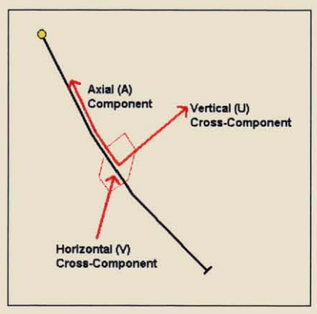
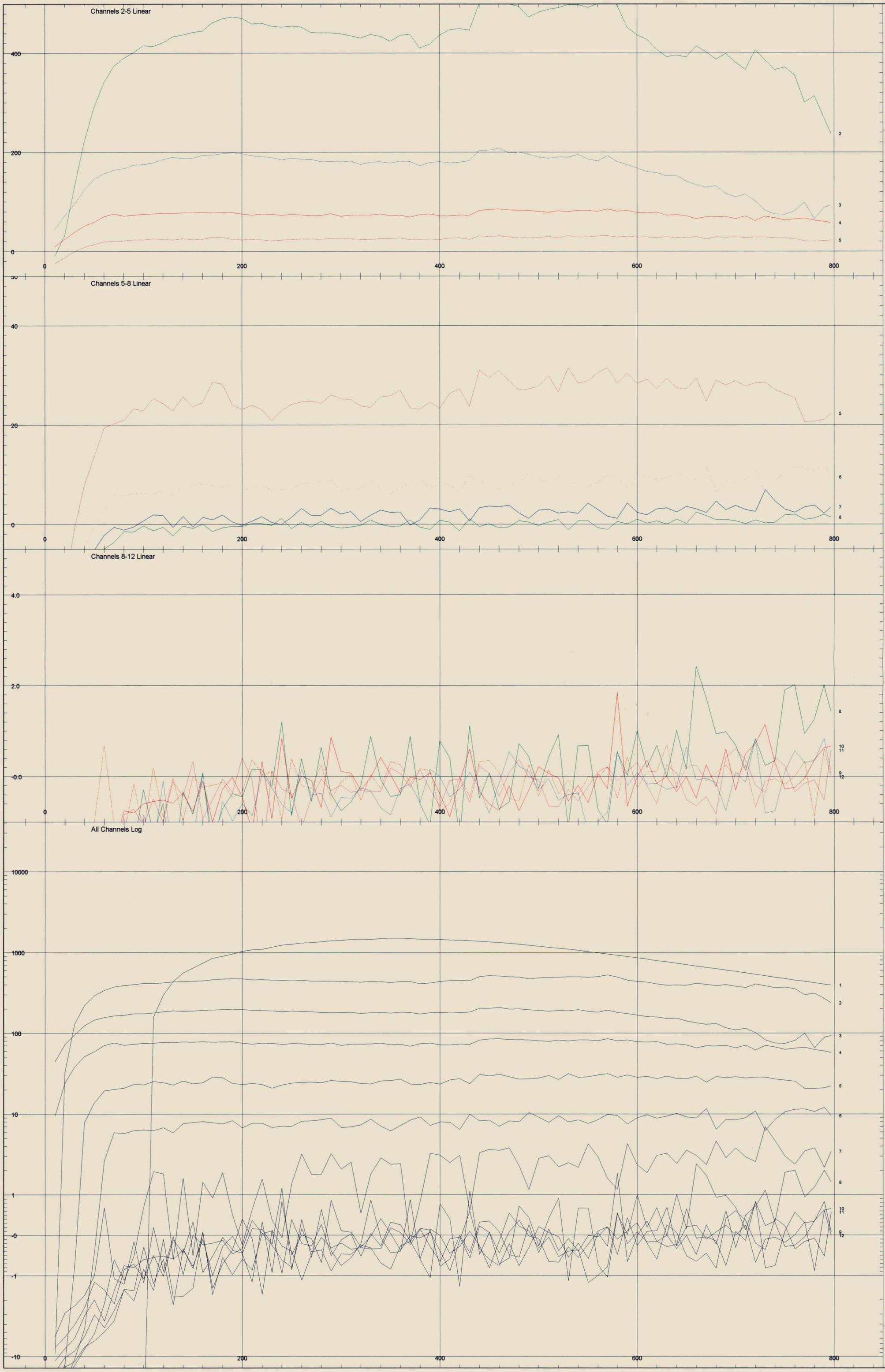


Transmitter Loop Layout



Coordinates Definition

Compiled by C Dauth 7/10/1999



5 cm

PASMINCO EXPLORATION

PLAN 4

TASMANIA
BEATRICE PROSPECT
Down-Hole EM Profiles
DRILLHOLE MS08
AXIAL COMPONENT (A)
TRANSMITTER LOOP BEM2

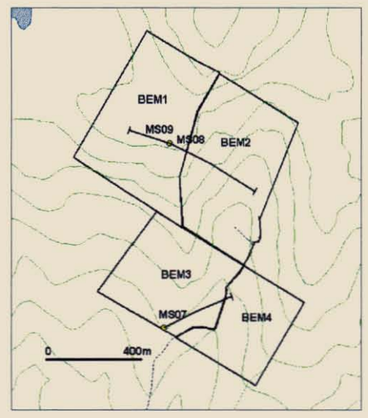
SURVEY DETAILS

Contractor: Outer Rim
Survey Date: May 1999
EM System: CRONE PEM
Hole: MS08
Time Base: 10 msec
Channels: 18 (including PP)
Ramp: 0.5 msec
Units: nV/A/m2
Rx Area: 6500 m2
Transmitter Area: 240,000 m2
Current: 4.3 A

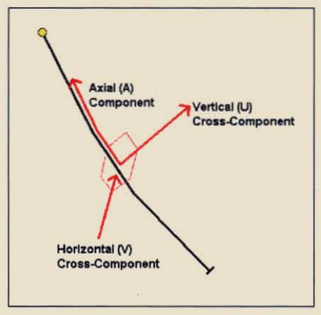
Horizontal Scale = 1:2500

PEM TIME WINDOWS
(msec after ramp cessation)

1. -0.198 (PP)
2. 0.090
3. 0.117
4. 0.151
5. 0.198
6. 0.25885
7. 0.33525
8. 0.43425
9. 0.56470
10. 0.73345
11. 0.95150
12. 1.23500
13. 1.60200
14. 2.07850
15. 2.69700
16. 3.49850
17. 4.53600
18. 5.88350



Transmitter Loop Layout



Coordinates Definition

Compiled by C Dauth 7/10/1999

Channels 2-5 Linear

Channels 5-8 Linear

Channels 8-12 Linear

All Channels Log

5 cm

PASMINCO EXPLORATION

PLAN 5

TASMANIA
BEATRICE PROSPECT
Down-Hole EM Profiles
DRILLHOLE MS08
U COMPONENT
TRANSMITTER LOOP BEM2

SURVEY DETAILS

Contractor: Outer Rim
Survey Date: May 1999
EM System: CRONE PEM
Hole: MS08
Time Base: 10 msec
Channels: 18 (including PP)
Ramp: 0.5 msec
Units: nV/A/m2
Rx Area: 6500 m2
Transmitter Area: 240,000 m2
Current: 4.3 A

Horizontal Scale = 1:2500

PEM TIME WINDOWS
(msec after ramp cessation)

1. -0.198 (PP)
2. 0.090
3. 0.117
4. 0.151
5. 0.198
6. 0.25885
7. 0.33525
8. 0.43425
9. 0.56470
10. 0.73345
11. 0.95150
12. 1.23500
13. 1.60200
14. 2.07850
15. 2.69700
16. 3.49850
17. 4.53600
18. 5.88350

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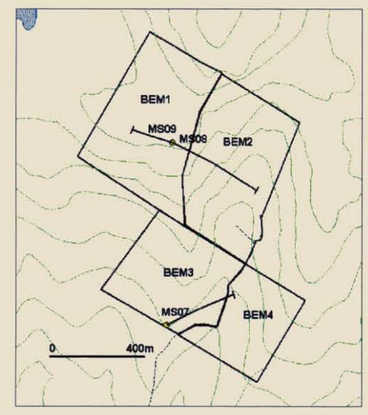
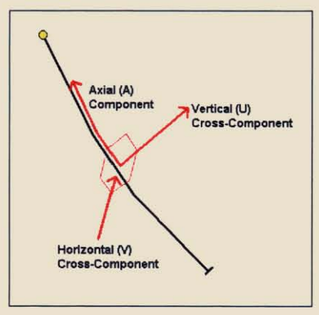


Transmitter Loop Layout



Coordinates Definition

Compiled by C Dauth 7/10/1999

Channels 2-5 Linear

Channels 5-8 Linear

Channels 8-12 Linear

All Channels Log

5 cm

PASMINCO EXPLORATION

PLAN 6

TASMANIA
BEATRICE PROSPECT
Down-Hole EM Profiles
DRILLHOLE MS08
V COMPONENT
TRANSMITTER LOOP BEM2

SURVEY DETAILS

Contractor: Outer Rim
Survey Date: May 1999
EM System: CRONE PEM
Hole: MS08
Time Base: 10 msec
Channels: 18 (including PP)
Ramp: 0.5 msec
Units: nV/A/m2
Rx Area: 6500 m2
Transmitter Area: 240,000 m2
Current: 4.3 A

Horizontal Scale = 1:2500

PEM TIME WINDOWS
(msec after ramp cessation)

1. -0.198 (PP)
2. 0.090
3. 0.117
4. 0.151
5. 0.198
6. 0.25885
7. 0.33525
8. 0.43425
9. 0.56470
10. 0.73345
11. 0.95150
12. 1.23500
13. 1.60200
14. 2.07850
15. 2.69700
16. 3.49850
17. 4.53600
18. 5.88350

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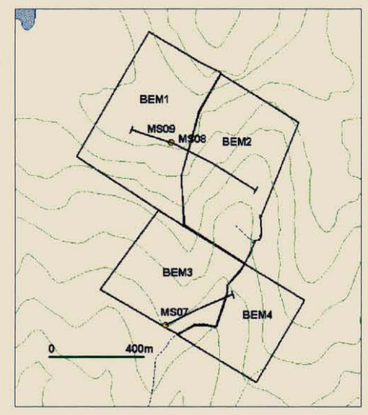
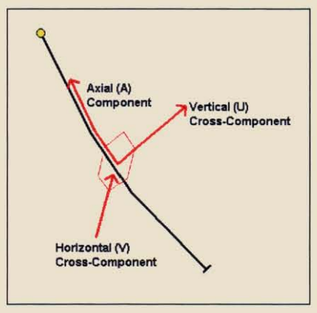
Dauth, C.; Denwer, K.; McNeill EL20/98; EL24/96; EL



Transmitter Loop Layout



Coordinates Definition

Compiled by C Dauth 7/10/1999

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APPENDIX 10

Interpretation of Downhole Electromagnetic Data on MS10 at the Beatrice Prospect - EL 6/98
Pasminco Exploration*
Dauth, C. EL6/98

BEATRICE PROSPECT

645512

Interpretation of Downhole Electromagnetic Data on

MS10 at the Beatrice Prospect,

September 1999, C. Dauth

PASMINCO EXPLORATION

INTERPRETATION OF DOWNHOLE ELECTROMAGNETIC DATA ON MS10 AT THE BEATRICE PROSPECT SEPTEMBER 1999

EL 6/98

Author: Chris Dauth

Date: October 1999

Submitted To: A McNeil

Copies To: Pasminco Exploration, Melbourne

Submitted By:

Accepted By:

Melbourne Report No: VC

CONTENTS

645514

1. SUMMARY

During September 1999 down-hole electromagnetic data (DHEM) using the CRONE PEM system were acquired on diamond drill-hole MS10 at the Beatrice Prospect. The Beatrice Prospect is situated in Western Tasmania within EL 6/98 approximately 7 kilometres north of the town of Queenstown. Outer-Rim Exploration Services were commissioned to complete the DHEM survey for Pasminco Exploration who are currently exploring the ground for Rosebery style Zn-Pb-Ag-Au mineralisation. Data were acquired using the CRONE DHEM time domain electromagnetic system. The survey was conducted by Outer Rim Exploration Services using the Pasminco Exploration CRONE PEM equipment with the exception of the axial probe and transmitter which were supplied by Outer Rim.

The aim of the DHEM survey was to delineate anomalous EM response that could be attributed to massive sulphide mineralisation for the purpose of defining further drill targets in the vicinity of drill-hole MS10. It is estimated that the DHEM technique would effectively explore within a 200 metre radius of the current drill-hole position. It must be considered that when reviewing this SUMMARY, and when applying the DHEM technique, that economic sulphide mineralisation may not necessarily provide a recognisable response (eg Hercules, Western Tasmania), and that some geological conditions provide anomalous EM response that is not associated with economic sulphide mineralisation (eg graphitic/pyritic black shales).

DHEM data were acquired in the time-domain using an impulse response (square-wave signal) CRONE PEM system. Data were acquired on 18 separate channels (including the "Primary Field" or PP measurement) on a 10 msec timebase. Three-component data were collected at 10 m intervals for the entire length of the 650m drill-hole. One transmitter loop was used for logging MS10. The X-Y cross-component data quite obviously show excessive noise that must be attributable to equipment fault. The data are useful, however, it is strongly recommended that the X-Y probe not be used on future surveys unless this problem can be rectified.

DHEM results from MS10 indicate the presence of an EM response centred at approximately 290 m down-hole. A sharp shoulder to this EM response at 370 m is coincident with the boundary between poorly-moderately conductive black shales and highly resistive ashy volcanics and coarser sediments. It is most likely that the response observed in MS10 is due to more conductive parts of the black shale unit. The decay rate of the response is exactly the same as the decay observed in the similar responses observed in DHEM data in near-by drill-holes MS07 and MS08. The exact location and geometry of the source of the response is not able to be adequately explained using available modelling techniques. This has been a large problem with regard to interpretation of the data. Ambiguities are thought to be due to complex geological setting and conductive host rocks. Nonetheless it is currently thought that the only responses observed at Beatrice in DHEM data to date is that of conductive host lithologies. No drill targets are clearly obvious. A Hellyer style EM response should be clearly recognisable in the Beatrice EM environment (and such a response is definitely not evident in data collected thus far) hence continued application of the technique is justified.

2. INTRODUCTION

The Beatrice Prospect is situated within EL6/98 approximately 7 km's north of the town of Queenstown in Western Tasmania. The ground is currently being explored by Pasminco Exploration for its potential to host Rosebery style Zn-Pb-Ag-Au mineralisation within Palaeozoic volcanics and volcaniclastic sediments of the Central Mt Read Volcanics. The region also has potential for Mt Lyell style Cu-Au mineralisation.

This report presents results of a down-hole electromagnetic (DHEM) survey on diamond drill-hole MS10 conducted by Outer Rim Exploration Services for Pasminco Exploration during August 1999. The aim of the DHEM survey was to delineate anomalous conductivity response that would be directly associated with massive sulphide mineralisation, and thus provide a target for further exploratory drilling. Previous DHEM logging conducted on nearby drillholes (MS07, MS08, and MS09 Dauth 1999) during 1999 indicate that the host lithologies at Beatrice do produce anomalous DHEM response. This needs to be taken into account when interpreting the data to avoid targeting of host rock EM responses.

3. LOCAL GEOLOGY AND PREVIOUS WORK

This summary of the geology and previous work is taken from the previous report on DHEM results on MS08 (Dauth 1999).

The Beatrice Prospect comprises a prospective horizon of the Cambrian Mt Read Volcanics at the top of the Central Volcanic Complex (CVC). The CVC comprises predominantly felsic volcanics and volcaniclastics and is typically overlain by a sequence of shales, siltstones, and sandstones (interpreted to be Lower Tyndall Group). It is conceptual that this contact provides a focus for mineralisation either by acting as a fluid trap and favourable geochemical position via the overlying shales, or as the sea-floor position for Koroko style VHMS mineralisation deposited during a period of quiescence. A quartz-feldspar porphyry has intruded possibly as a sill along this contact and is a prominent feature of the local geology (the Mt Sedgewick Porphyry). The Ordovician Owen Conglomerate forms topographic ridges and scree slopes that abut onto the prospective ground. Remnants of eroded Permian sediments as horizontal layered clay/silt/sand beds are also evident in the region.

The simplified local geology comprises a gently folded to steeply dipping north-south striking black shale horizon situated at the contact between overlying porphyry and underlying volcaniclastic and felsic volcanic units. Locally the black shale is intercalated with both the overlying porphyry and the underlying ashy volcanics. The black shale outcrops along a fault expressed as a present day drainage (Itac Creek) and is interpreted to dip steeply to the west and then gently fold to form an anticline in the west underlying the Mt Sedgewick Porphyry. Minor Pb-Zn mineralisation is observed in outcrop and in drill intersections within the black shale and underlying siliclastics. The two areas with potential for further mineralisation are considered to be the steeply dipping shale in the Itac Creek and the extensions of this shale (and ashes-shales-ignimbrites) that underlie the Mt Sedgewick Porphyry to the West and East of Itac Creek.

Exploration to date has focused upon the black shale units that are situated strike parallel with the Itac Creek Fault.

Previous work has been summarised by Denwer (1998) in an unpublished report for Pasminco Exploration. This work is further summarised into point form as follows:

- Stream sediment sampling and geological mapping - 1975
- Establishment of over 40 km's of gridding - 1976-present
- 38 line km's of gradient array IP surveying - 1976
- Additional soil sampling - 1977-78
- Drilling MS1, MS2, and MS3 - 1978
- EIP, DHIP, dipole-dipole, and pole-dipole IP geophysical surveys (SCINTREX) - 1978
- Drilling MS4, and MS5 - 1979
- Ground magnetics, gradient array IP, pole-dipole IP, dipole-dipole IP - 1979
- Fixed loop UTEM - 1989
- Drilling MS06 - 1996
- Drilling and DHEM logging; MS07, MS08, and MS09 - 1998-99

Drillhole MS10 was drilled to test a surface geochemical anomaly. The hole is collared at 385348mE, 5347910mN, and 739.1mRL. The hole survey details are provided in the contractor report APPENDIX I. A summary geological log follows:

0 - 21 m	Black shale
21 - 71 m	Quartz Feldspar Porphyry
71- 72 m	Itat Creek Fault
72 - 98 m	Strongly broken quartz carbonate veined black shale
98 - 263 m	Black shale (172-183 m shear/fault)
263 - 311 m	Quartz Feldspar Porphyry
311 - 350 m	Black shale
350 - 374 m	Pyrrhotitic and pyritic black shale
374 - 548 m	Ashy volcanics, minor shale, limestone, conglomerate
548 - 596 m	Black shale pyritic, interbedded with ashy volcanics
596 - 625 m	Ashy volcanic
625 - 635 m	Ashy volcanic interbedded with felsic volcanic
635 - 656.4m	Feldspar phyric volcanic

The drill-hole is interpreted to drill through the hanging wall of the easterly dipping Itat Creek Fault then into the core of a synclinal structure of folded black shale, porphyry, an ashy volcanics. The greatest potential for a large tonnage base-metal sulphide orebody is as a strataform body within the ashy volcanic interval below 374 m (ie the postulated equivalent Rosebery position). Therefore the primary target for a DHEM survey is to define anomalous response below that depth. Above 374 m experience has shown that the host lithologies (black shale and a black shale/porphyry pepperite) can produce anomalous EM response that could mask a weakly conductive mineralised system (ie galena/pyrite poor and sphalerite rich).

4. SURVEY SPECIFICATIONS

The survey conducted by Outer Rim Exploration Services using the CRONE PEM system. The Pasminco CRONE system was used for the survey with the exception of the axial probe and the transmitter which were supplied by Outer Rim Exploration Services.

The survey specifications are tabulated below:

Date of Survey:	September 1999
Contractor:	Outer Rim Exploration Services
Survey Type:	DHEM
System:	CRONE PEM
No. of Drillholes:	1 MS10
Components:	Axial (A) and cross-components (U and V)
Station Spacing:	10m (A, U, and V)
Time Base:	10 msec
Channels:	18 including the PP field
Ramp Time:	500 μsec
Synchronisation:	Cable
Transmitter Size:	600m x 400m
Current:	4.3A Amps

The method of data noise and repeatability control was as follows:

- Two readings were taken at every station and compared for repeatability. Additional readings were taken as required.

Only one transmitter loop position was utilised for MS10. For reference within the text of this report the loops has been labelled BEM2. The location of transmitter loops is presented in Figure 2. Transmitter loop corner coordinates for all loops that have been used at Beatrice in the past (local and AMG) are provided below:

Loop	Corner	Local East	Local North	AMG East	AMG North	RL
BEM1	NW	-1700	2200	385020	5348712	990
BEM1	NE	-1350	2200	385310	5348546	1045
BEM1	SE	-1100	1600	385161	5347919	820
BEM1	SW	-1650	1600	384718	5348205	870
BEM2	NW	-1350	2200	385310	5348546	1045
BEM2	NE	-950	2200	385632	5348347	910
BEM2	SE	-800	1600	385414	5347766	740
BEM2	SW	-1100	1600	385161	5347919	820
BEM3	NW	-1600	1225	385060	5347985	815
BEM3	NE	-1600	800	385410	5347770	740
BEM3	SE	-1200	1200	384830	5347650	670
BEM3	SW	-1200	850	385120	5347475	680
BEM4	NW	-1600	800	385410	5347770	740
BEM4	NE	-1600	500	385655	5347610	830
BEM4	SE	-1200	500	385470	5347300	710
BEM4	SW	-1200	850	385120	5347475	680

Time gates utilised by the CRONE PEM system are tabulated below (msec after ramp cessation):
NB. The contractor report (APPENDIX I) uses a system whereby the number 1 channel is the channel that follows the PP channel.

CHANNEL	DELAY	WIDTH
1 (PP)	-0.198	0.1
2	0.05625	0.01349
3	0.07425	0.02251
4	0.09900	0.02700
5	0.13280	0.04060
6	0.17790	0.04960
7	0.23635	0.06730
8	0.31500	0.09000
9	0.42075	0.12150
10	0.56020	0.15740
11	0.74470	0.21160
12	0.98975	0.27850
13	1.31350	0.36900
14	1.74550	0.49500
15	2.31950	0.65300
16	3.08000	0.86800
17	4.09000	1.15200
18	5.42900	1.52600

5. MODELLING PARAMETERS

Data were modelled using the FILAMENT modeling software invoked through the EMVISION EM modelling and visualisation package. The FILAMENT software is capable of inversion of results to provide minimum error between observed and modelled data, however computer inversion can have the undesirable outcome of producing non-geologically feasible results due to the non-uniqueness of solution. This is particularly the case whereby DHEM response is made complicated through superposition of response from multiple sources. It is for this reason that the software was used only in the forward modeling mode for modelling MS10.

6. DISCUSSION AND RESULTS

Stacked profiles of the down-hole response are presented in the contractors report as APPENDIX I. Results are discussed below

MS10

Axial and cross-component data show evidence for several DHEM responses.

A narrow weak in-hole response is observed at 180 m down-hole coincident with a fault/shear zone indicated in the geological log. The Itat Creek Fault does not produce an anomalous in-hole response.

A broad early-time axial component positive response migrating to late-time negative axial component is observed from 80-370 m. This is precisely coincident with the intersection of black shale in MS10. Similar responses were observed in previous DHEM logs at the Beatrice Prospect. It is most likely that response observed in MS10 is due to the host lithology (ie black shale). The response clearly has an off-hole component indicating more conductive parts of the black shale exist off-hole. Decay analysis indicates a time-constant of 0.43 msec from the axial component data. This is equivalent to the time-constants determined from responses observed in drill-holes MS07 and MS08.

U component data (referred to as X component in APPENDIX I) exhibit a broad late-time (channel 6-10) negative centred at about 400 m down-hole. The V component data (referred to as Y component in APPENI I) exhibit a broad positive to negative cross-over at late-time (channel 6-10) centred on 400 m down-hole. Modelling is unable to resolve the position of a single conductor that would conform with known geology. Use of several conductors can suitably explain the anomaly placing two ring filaments at the following locations:

FILAMENT 1.
385410 mE
5348000 mN
510 mRL
Radius = 80 m
Azimuth = 275°
Dip = 50° to the west

FILAMENT 2.
385160 mE
5348135 mN
320 mRL
Radius = 120 m
Azimuth = 90°
Dip = 75° to the east

These two positions would correlate with electromagnetically coupled limbs of the Itat Creek Black Shale on the eastern and western side of the Itat Creek Fault respectively.

Confidence on the modelling accuracy is very low. The FILAMENT 1 model has been adequately tested by MS01 which did intersect black shales (graphitic and pyritic in places) that could explain the EM anomaly. The FILAMENT 2 model is most likely the east dipping western limb of the black shale. Processing of the data with derivative techniques would in theory (in a perfect world) be able to determine whether multiple EM sources were being detected. The relatively noisy data recorded at Beatrice would not be amenable to this kind of processing.

7. RECOMMENDATIONS

- No drill targets are recommended based upon the DHEM results from MS10.
- The DHEM logging did confirm the presence of EM conductive sources which are currently thought to be formational in origin.
- The Beatrice area comprises geological units that give rise to anomalous EM response that could easily be targeted as a conductive sulphide body. Similarly it would also be possible to discount an EM response as formational when in fact the response could be due to sulphide mineralisation. Further DHEM logging at Beatrice is recommended on the basis that an orebody response could well be significantly more conductive than the observed formational responses and thus allow easy identification, however, it must be pointed out that the technique is by no means a sterilisation method since the EM response from a poorly conducting mineralised system (sphalerite rich) might be masked by the background response.
- The X-Y cross-component data were excessively noisy (in comparison to other data acquired at the Beatrice Prospect) and it is recommended that the Pasminco CRONE X-Y probe not be used until the cause of the problem is rectified.

8. KEYWORDS AND LOCALITY

Keywords

conductivity, down-hole, electromagnetics, orebody, pyrite, sphalerite, shale, sulphides

Locality

1:100K Sophia 8014

1:250K SK\55-SW Sheet

9. REFERENCES

Dauth, C., 1999, Modelling and interpretation of downhole electromagnetic data on MS08 at the Beatrice Prospect May 1999 EL6/98; Pasminco Exploration Internal Report No. VC246

Dauth, C., 1999, Modelling and interpretation of induced polarisation data from the Beatrice Prospect February - March 1999 EL 6/98; Pasminco Exploration Internal Report No. VC247

Dauth, C., 1999, Modelling and interpretation of downhole electromagnetic data on MS07 and MS09 at the Beatrice Prospect September 1999 EL6/98; Pasminco Exploration Internal Report No. VC

Denwer, K. D., 1998, Beatrice Prospect Literature Review, In-house Technical Note for Pasminco Exploration, *not published*

APPENDIX I

Contractor Report on DHEM Survey

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OUTER-RIM EXPLORATION SERVICES

ACN 059 220 192

Geophysical Contracting Services

100% Australian Owned

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Client	:	Pasminco Exploration
Prospect	:	Beatrice.
Area	:	Rosebery, Tas.
Survey	:	Borehole PEM Survey
Survey Period	:	21st to 23rd September, 1999
Operator	:	Adrian Page.

DAILY LOG: Pasminco Exploration - September, 1999

DATE	COMMENTS	CHARGES
20-09-99	Flew from Townsville to Burnie, picked up the Pasminco vehicle and drove to Rosebery. Organised the gear and found that the probe chargers had burned out. The Axial probe was fully charged and the receiver charger was working so I survey tomorrow. I requested replacement chargers to be sent from Townsville.	
	1 Mob. day	$ 300.00
21-09-99	Had to chase up a fuel tank as the one for the gear was missing - we used a boat fuel tank successfully for this purpose. Went out to the Beatrice prospect and dummied MS-10 to EOH at 656m. We then returned to the vehicle and moved the rest of the gear up in three loads using the six wheel drive bike. Set up and surveyed the Axial component on the hole to 650m, taking 3 repeat readings per station. Returned to Rosebery at 6.30pm. Downloaded the data and processed it.	
	SURVEY PARAMETERS:	
	Loop BEM2 :600 x 400m 385310E; 5348546N: 385161E; 5347919N: 385414E; 5347766N: 385632E; 5348347N:	
	Current :4.3 Amps Time Base :10 ms Ramp Time :0.5ms Sync :Cable	
	Hole No. **:MS-10** 385347.8E; 5347910.6N: Depth :650m Channels :17 Components :Z	
	1 Survey day	$ 500.00
22-09-99	Completed the logs and expenses and reviewed the Axial data. Sent the digital data and plots to Neil Hughes, then waited for the chargers and drill to turn up.	
	1 Standby day	$ 300.00
23-9-99	Went out to the site, set up and surveyed the X-Y components, then packed up the gear, carried it back down the hill to the truck and left the site, arriving back in Rosebery at 6.00pm.	
	SURVEY PARAMETERS:	
	Loop BEM2 :600 x 400m 385310E; 5348546N: 385161E; 5347919N: 385414E; 5347766N: 385632E; 5348347N:	

APPENDIX

Current	:4.3 Amps
Time Base	:10 ms
Ramp Time	:0.5ms
Sync	:Cable

Hole No. **:MS-10**
385347.8E; 5347910.6N:

Depth	:650m
Channels	:17
Components	:X,Y

1 Survey day $ 500.00

24-9-99 Drove back to Wynyard and flew back to Townsville.

1 Mob. day $ 300.00

CRONE PULSE EM SYSTEM

SYSTEM DESCRIPTION

The Crone Pulse EM system is a time domain electromagnetic method (TDEM) that utilizes an alternating pulsed primary current with a controlled shut-off and measures the rate of decay of the induced secondary field across a series of time windows during the off-time. The system uses a transmit loop of any size or shape. A portable power source feeds a transmitter which provides a precise current waveform through the loop. The receiver apparatus is moved along surface lines or down boreholes.

The transmitter cycle consists of slowly increasing the current over a few milliseconds, a constant current, abrupt linear termination of the current, and finally zero current for a selected length of time in milliseconds. The EMF created by the shutting-off of the current induces eddy currents in nearby conductive material thus setting-up a secondary magnetic field. When the primary field is terminated, this magnetic field will decay with time. The amplitude of the secondary field and the decay rate are dependent on the quality and size of the conductor. The receiver, which is synchronized to the off-time of the transmitter, measures this transient magnetic field where it cuts the surface coil or borehole probe. These readings are across fixed time windows or "channels".

SYSTEM TERMINOLOGY

Ramp Time

"Ramp time" refers to the controlled shut-off of the transmitter current. Three ramp times are selectable by the operator; 0.5ms, 1.0ms, and 1.5ms. By controlling the shut-off rather than having it depend on the loop size and current ensures that the same waveform is maintained for different loops so data can be properly compared.

The 1.5ms ramp is the normally used setting for good conductors. It keeps the early channel responses on scale and decreases the chance of overload. The faster ramp times of 1.0ms and 0.5ms will enhance the early time responses. This can be useful for weak conductors when data from the higher end of the frequency spectrum is desired.

Time Base

Time base is the length of time the transmitter current is off (it includes the ramp time). This also equals the on time of the current. Eight time bases are selectable by the operator. They include the original time bases used in the analog system as well as time bases to eliminate the effects of powerline interference. The eight time bases are as follows: compatible to analog Rx: 10.89ms, 21.79ms; 60hz powerline noise reduction: 8.33ms, 16.66ms, & 33.33ms; 50hz powerline noise reduction: 10.00ms, 20.00ms, 50.00ms and 150ms.

Since readings are taken during the off cycles, the time base will have an effect on the receiver channels. Normally, a standard time base is selected for the type of system and survey being used, but this can be changed to suit a particular situation. A longer time base is preferred for conductors of greater time constants, and in surveys such as resistive soundings where more channels are desired.

Zero Time Set

The term "zero time set" or "ZTS" refers to the starting point for the receiver channel measurements. It is manually set on the receiver by the operator thus allowing adjustments for the ramp times and fine tuning for any fluctuations in the transmitter signal.

Receiver Channels

The rate of decay of the secondary field is measured across fixed time windows which occupy most of the off-time of the transmitter. These time windows are referred to as "channels". These channels are numbered in sequence with "1" being the earliest. The analog and datalogger receivers measured eight fixed channels. The digital receiver, being under software control, offers more flexibility in the channel positioning, channel width, and number of channels.

PP Channel

The PEM system monitors the primary field by taking a measurement during the current ramp and storing this information in a "PP channel". This means that data can be presented in either normalized or unnormalized formats, and additional information is available during interpretation. The PP channel data can provide useful diagnostic information and helps avoid critical errors in field polarity.

Synchronization

Since the PEM system measures the secondary field in the absence of the primary field, the receiver must be in

"sync" with the transmitter to read during the off-time. There are three synchronization methods available: cable connection, radio telemetry, and crystal clock. This flexibility enhances the operational capabilities of the system.

SURVEY METHODS

The wide frequency spectrum of data produced by a Pulse EM survey can be used to provide structural geological information as well as the direct detection of conductive or conductive associated ore deposits. The various types of survey methods, from surface and borehole, have greatly improved the chances of success in deep exploration programs. There are eight basic profiling methods as well as a resistivity sounding mode.

Moving Coil

A small, multi-turn transmitter loop (13.7m diameter) is moved for each reading while the receiver remains a fixed distance away. This method is ideal for quick reconnaissance in areas of high background conductivity.

Moving Loop

Same as Moving Coil method, but with a larger transmit loop (100 to 300 meters square). This method provides deeper penetration in areas of high background conductivity, and works best for near-vertical conductors. This method can be used in conjunction with the Moving In-loop survey for increased sensitivity to horizontal conductors.

Moving In-Loop

A transmit loop of size 100 to 300 meters square is moved for each reading while the receiver remains at the center of the loop. This method provides deep penetration in areas of very high background conductivity, and works best for near-horizontal conductors. It can be used in conjunction with the Moving Loop survey.

Large In-Loop

A very large, stationary transmit loop (800m square or more) is used, and survey lines are run inside the loop. This mode provides very deep penetration (700m or more) and couples best with shallow dip conductors (<45 deg.) under the loop.

Deepem

A large, stationary transmit loop is used, and survey lines are run outside the loop. This mode provides very deep penetration, and couples best with steeply dipping conductors (>45 deg.) outside the loop.

Borehole (Z Component only)

Isolated Borehole: A drill hole is surveyed by lowering a probe down a hole and surveying it with a number of transmit loops laid out on surface. The data from multiple loops gives directional information on the conductors.

Multiple Boreholes: One large transmit loop is used to survey a number of closely spaced holes. The change in anomaly from hole to hole provides directional information.

These methods have detected conductors to depths of 2500m from surface and up to 200m from the hole.

3-D Borehole

Drill holes are surveyed with both the Z and the XY borehole probes. The X and Y components provide accurate direction information using just one transmit loop.

Since the probe rotates as it moves down the hole a correction is required for the X-Y data. This is accomplished in one of two ways. The standard approach is to use the measurement of the primary field from the "PP" channel, apply a "cleaning" algorithm to remove most of the secondary field contamination, and compare this to theoretical values. The amount of probe rotation is then calculated, and the correction can be made. The second method involves the use of an optional orientation device for the X-Y probe which is produced in cooperation with IFG Corp. This attachment uses dipmeters to calculate the probe rotation.

Underground Borehole

Underground drill holes can be surveyed in any of the above mentioned borehole methods with one or more transmit loops on the surface. Near-horizontal holes can be surveyed using a push-rod system.

Resistivity Soundings

By reading a large number of channels in the centre of a transmit loop it is possible to preform a decay curve analysis giving a best-fit layer earth model using programs such as ARRTI or TEMIX.

EQUIPMENT

Transmit Loops

The PEM system can operate with practically any size of transmit loop, from a multi-turn circular loop 13.7m in diameter, to a 1 or 2 turn loop of any shape up to 1 or 2 kilometers square using standard insulated copper wire of 10 or 12 gauge. The multi-turn loop is made in two sections with screw connectors. The 10 or 12 gauge loop wire comes on spools in either 300m or 400m lengths.

Power Supply

The PEM system normally operates with an input voltage from 24v to 120v. The maximum current is 20 amps in a single loop but the effective current can be increased by doubling the loop wire in series. For low power surveys a 20amp/hr 24v battery can be used. The power supply requires a motor generator and a voltage regulator to control and filter the input voltage to the transmitter.

Specifications: PEM Motor Generator

- 4.5 hp Wisconsin, (2 kw)
- belt drive to D.C. alternator
- cable output to regulator
- maximum output: 120v, 20amp (2 kw);
- fuse type overload protection
- steel frame
- external gas tank
- unit weight: 33kg (2 kw); 52kg (4 kw)

Specifications: PEM Variable Voltage Regulator

- selectable voltage between 24v and 120v or 48v and 240v
- 20amp maximum current
- fuse and internal circuit breaker protection

Transmitter

The transmitter controls the bi-polar on-off waveform and linear current shut-off ramp. The latest 2000w PEM Transmitter has the following specifications:

Specifications: PEM Transmitter

- time bases: 10.89ms, 21.79ms, 8.88ms, 16.66ms, 33.33ms, 10ms, 20ms, 50ms 150ms.
- ramp times: 0.5ms, 1.0ms, 1.5ms
- operating voltage: 24v to 120v (2 kw); 48v to 240v (4 kw)
- output current: 5amp to 20amp
- monitors for input voltage, output current, shut-off ramp, tx loop continuity, instrument temperature, and overload output current
- automatic shut-off for open loop, high instrument temperature, and overload
- fuse and circuit breaker overload protection
- three sync modes: 1) built-in radio and antenna
  2) cable sync output for direct wire link to receiver or remote radio
  3) connectors for the crystal clock

Receiver

The receivers measure the rate of decay of the secondary field across several time channels. Three types of receivers are available with the PEM system: Analog Rx, Datalogger Rx, and Digital Rx. The Analog Rx and Datalogger Rx read eight fixed time channels while the Digital Rx, under software control, offers a variety of channel configurations. The Digital Rx has been used in the field for contract surveys since 1987.

Specifications: Digital PEM Receiver

- operating temperature -40°C to 50°C
- unit weight 15kg; shipping weight 25.5kg

Hardware:

- 24v rechargeable gel cell battery supply
- two CMOS microprocessors (NSC800)
- alphanumeric keyboard

- 2 x 16 character cold weather display
- 16 x 40 character (256 x 128 pixels graphic) display
- 64k byte solid state memory storage
- cable, radio or crystal clock synchronization
- RS-232 serial I/O

Sampling process features:
- 16 bit A/D conversion
- digital recording of data in nano-tesla/sec
- rejection of atmospheric noise samples based on digital threshold detection
- automatic gain control to optimize receiver signal to noise ratio

Menu driven operating software system offering the following functions:
- controls channel positions, channel widths, and number of channels using a basic slice of 4.5µsec
- time bases: 10.89ms, 21.79ms, 8.88ms, 16.66ms, 33.33ms, 10ms, 20ms, 50ms and 150ms
- ramp time selectable in 4.5µsec steps
- sample stacking from 512 to 65536
- scrolling routines for viewing data
- graphic display of decay curve and profile with various plotting options
- routines for memory management
- control of data transmission
- provides information on instrument and operating status

Sync Equipment

There are three modes of synchronization available; radio, cable, and crystal clock. The radio sync signal can be transmitted through a booster antenna from either the PEM Transmitter internal radio or through a Remote Radio.

Specifications: Sync Cable
- 2 conductor, 24awg, teflon coated
- approx. 900m per aluminum spool with connectors

Specifications: Remote Radio
- operating frequency 27.12mhz
- 12v rechargeable gel cell battery supply
- fuse protection
- sync wire link to transmitter
- coaxial link to booster antenna

Specifications: Booster Antenna
- 8m, 4 section aluminum mast
- guide rope support
- ¼ wave CB fiberglass antenna
- range up to 2km
- coaxial connection to transmitter or remote radio

Specification: Crystal Clocks
- heat stabilized crystals
- 24v rechargeable gel cell battery supply
- rx unit can be separate or housed in the receiver
- outlet for external supplementary battery supply

Surface PEM Receive Coil

The Surface PEM Receive Coil picks up the EM field to be measured by the receiver. The coil is mounted on a tripod that can be positioned to take readings of any component of the field.

Specifications: Surface PEM Receive Coil
- ferrite core antenna
- built-in preamplifier
- VLF filter
- 10khz bandwidth
- 23:1 amplifier gain
- two 9v transistor battery supply
- tripod adjustable to all planes

Borehole PEM Z Component Probe

The Z component probe measures the axial component of the EM field. The Z component data is not affected

by probe rotation so no correction are required.

645536

Specifications: Borehole PEM Z Component Probe

- ferrite core
- built-in preamplifier
- dimensions: length - 1.6m; dia - 3.02cm (3.15cm for high pressure tested probes)
- internal rechargeable ni-cad battery supply
- replaceable heat shrink tubing for abrasion protection
- pressure tested for depths 2800m

Borehole PEM XY Component Probe

The XY probe measures two orthogonal components of the EM field perpendicular to the axis of the hole. Correction for probe rotation can be achieved by two methods. The standard approach is to use the measurement of the primary field from the "PP" channel, apply a "cleaning" algorithm to remove most of the secondary field contamination, and compare this to theoretical values. The amount of probe rotation is then calculated, and the correction can be made. The second method involves the use of an optional orientation device for the X-Y probe that uses dipmeters to calculate the probe rotation.

Specifications: Borehole PEM XY Component Probe

- ferrite core
- built-in preamplifier
- dimensions: length - 2.01m; dia - 3.02cm
- internal rechargeable ni-cad battery supply
- selection of X or Y coils by means of a swich box on surface or automatic switching with Digital receiver
- replaceable heat shrink tubing for abrasion protection
- pressure tested for depths to 2800m

Orientation Device

The orientation device is an optional attachment for the XY probe which measures the rotation of the probe using two dipmeters.

Specifications: Orientation Device

- 2 axis tilt sensors
- sensitivity +/- 0.1 deg.
- operating range -89.5 to -10 deg.
- dimensions: length - 0.94m; dia - 28.5cm

Borehole Equipment

To lower the probe down a drill hole requires a cable and spool, winch assembly frame and cable counter. Borehole surveys also require equipment to "dummy probe" the hole before doing the survey.

Specifications: Borehole Cable

- two conductor shielded cable
- kevlar strengthened
- currently 1500m but will shortly have cabability of surveying to depths of 3000m.

Specifications: Slip Ring

- attaches to side of borehole cable spool providing a connection to the receiver while allowing the spool to turn.
- VLF filter
- pure silver contacts

Specifications: Borehole Counter

- attaches to the drill hole casing
- calibrated in meters

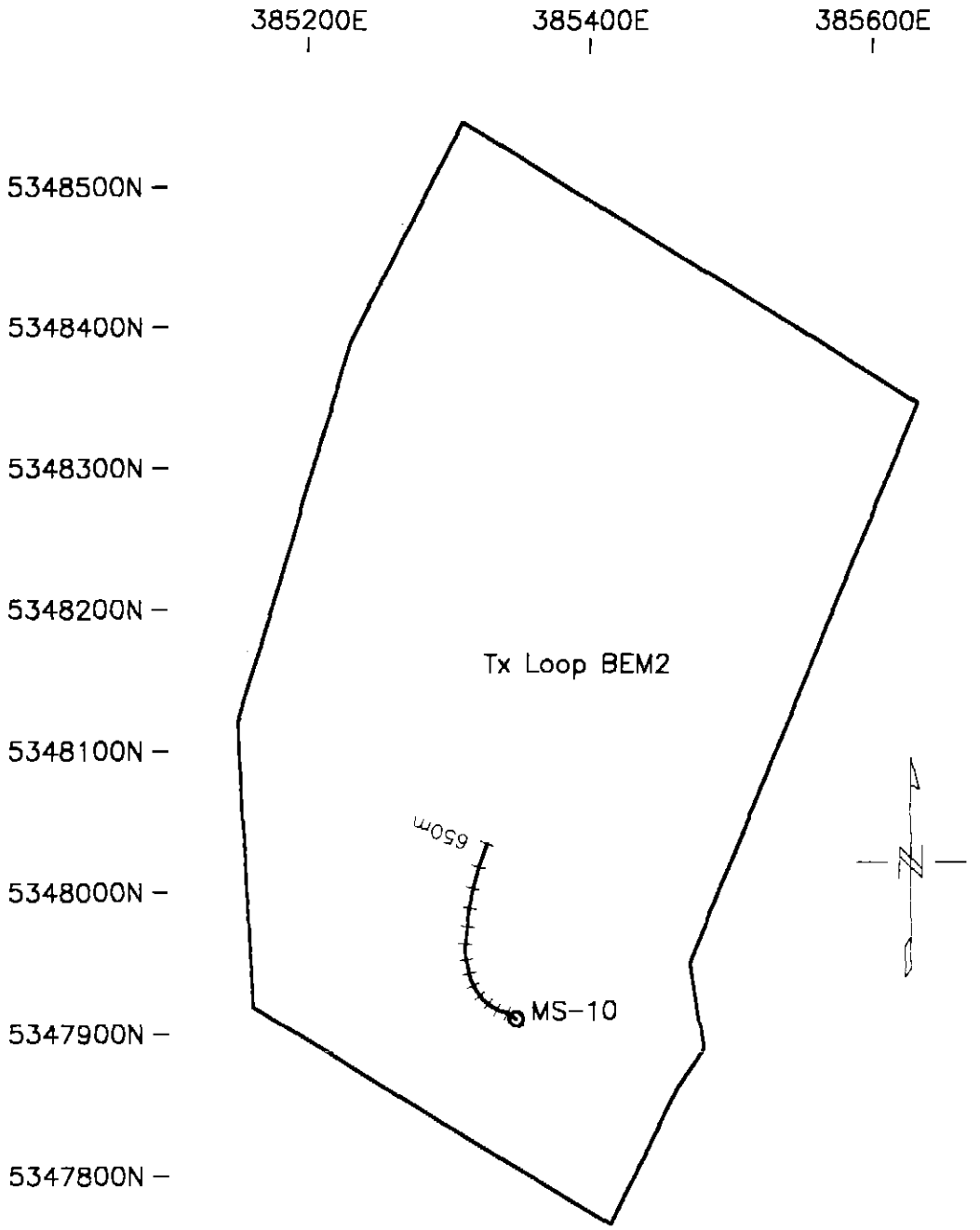
Specifications: Dummy Probe and Cable

- solid steel or steel pipe
- same dimensions as borehole probe
- shear pin connection to dummy cable

PLOTS

CONTENTS

645539



Scale 1:5000

100 0 100

(metres)

Pasminco Exploration

Beatrice

3-D Borehole Pulse EM Survey

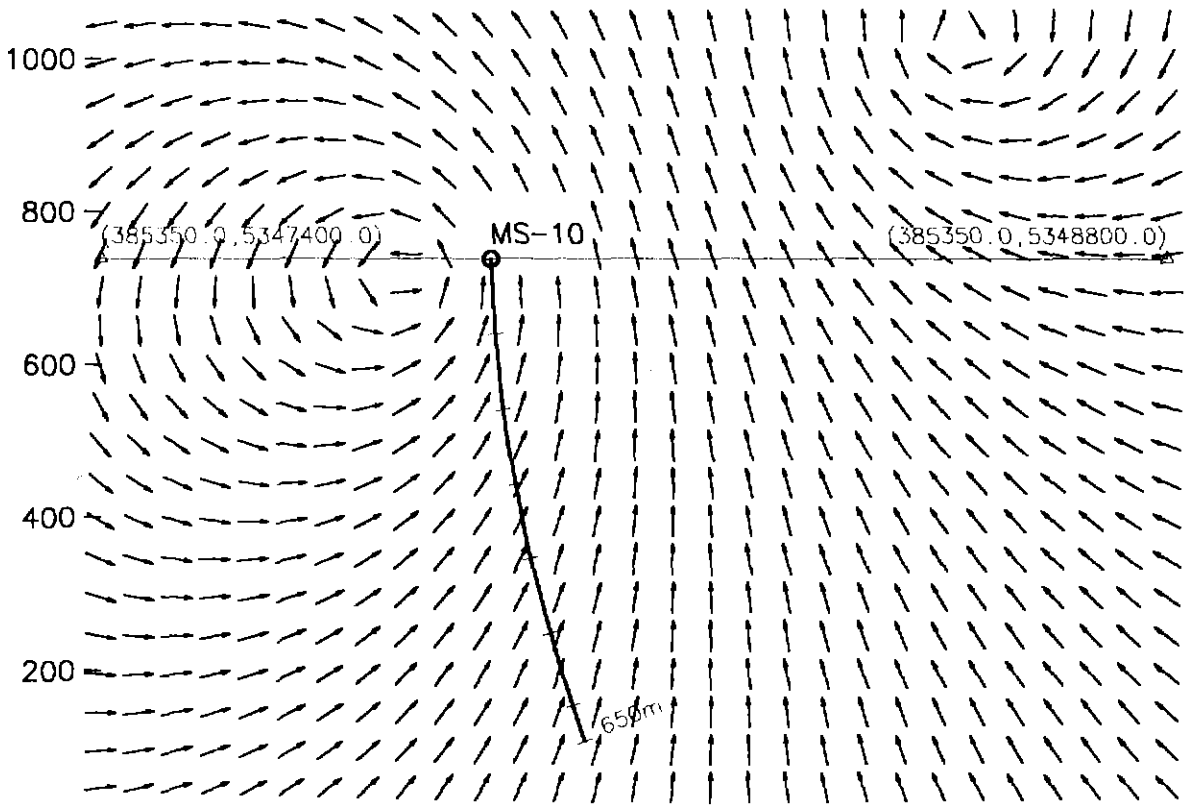
Borehole & Loop Location Map

Hole: MS-10

Survey Date: Sep 21, 1999

Outer-Rim Exploration Services

N-S Section



Scale 1:10000

100 0 100 200

(metres)

5 cm

Pasminco Exploration

Beatrice

3-D Borehole Pulse EM Survey

Hole Section with Primary Field

Hole: MS-10

Survey Date: Sep 21, 1999

Outer-Rim Exploration Services

645540

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-10
Grid	: Beatrice	Tx Loop	: BEM2
Date	: Sep 21, 1999	File name	: MS10Z.PEM
Time Base	: 10.00 ms	# Readings	: 70
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 17	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: -
Loop Size	: 600m X 400m	Receiver	: Digital #124
Current	: 4.3 Amps	Operator	: Adrian Page

Loop Coordinates (X,Y,Z)

1. 385310m, 5.34855e+06m, 1045m	2. 385230m, 5.34839e+06m, 960m
3. 385150m, 5.34812e+06m, 900m	4. 385161m, 5.34792e+06m, 820m
5. 385340m, 5.34781e+06m, 720m	6. 385414m, 5.34777e+06m, 740m
7. 385460m, 5.34786e+06m, 760m	8. 385480m, 5.34789e+06m, 770m
9. 385470m, 5.34795e+06m, 765m	10. 385632m, 5.34835e+06m, 910m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 385348m, 5.34791e+06m, 739.1m	2. 302deg, 82deg, 30m
3. 296.8deg, 81.1deg, 30m	4. 296.7deg, 80.9deg, 30m
5. 297.6deg, 80.9deg, 30m	6. 302.5deg, 81deg, 30m
7. 309deg, 80.6deg, 30m	8. 318.9deg, 80.5deg, 30m
9. 327.5deg, 80.1deg, 30m	10. 335.2deg, 79.5deg, 30m
11. 344deg, 78.9deg, 30m	12. 346deg, 78.9deg, 30m
13. 349.4deg, 78.6deg, 30m	14. 358.1deg, 77.3deg, 30m
15. 5deg, 76.2deg, 30m	16. 5.6deg, 75.4deg, 30m
17. 6.5deg, 74.7deg, 30m	18. 8.6deg, 74.2deg, 30m
19. 11.4deg, 73.4deg, 30m	20. 13deg, 72.5deg, 30m
21. 15.3deg, 71.6deg, 30m	22. 18.3deg, 70.2deg, 30m
23. 19.7deg, 68.2deg, 18m	24. 21.1deg, 67.5deg, 2m

Channel Times (usec)

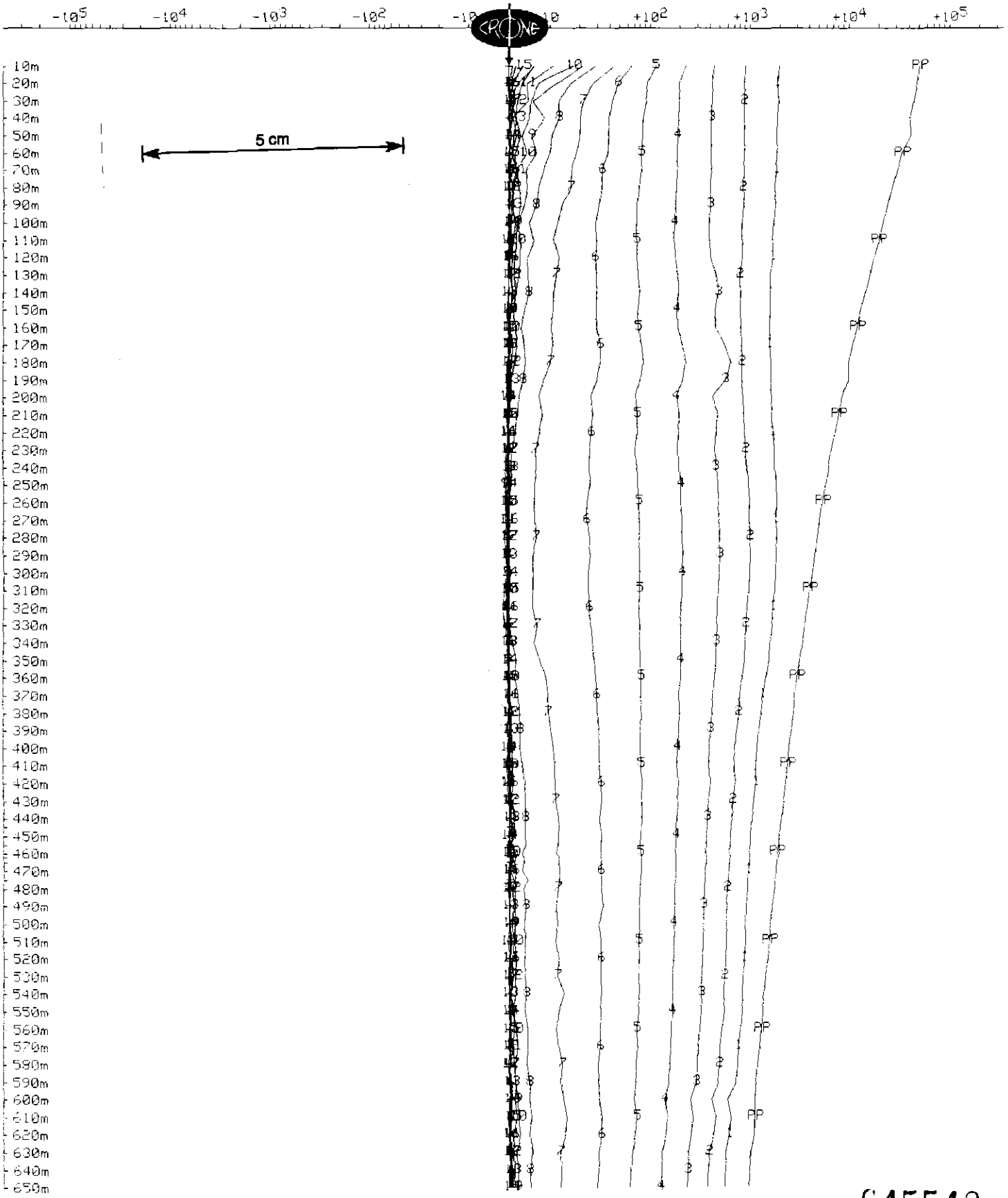
Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	76	104	90	2	104	131	117
3	131	171	151	4	171	225	198	5	225	292	259
6	292	378	335	7	378	490	434	8	490	639	565
9	639	828	733	10	828	1075	952	11	1075	1395	1235
12	1395	1809	1602	13	1809	2348	2078	14	2348	3046	2697
15	3046	3951	3498	16	3951	5121	4536	17	5121	6646	5884

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-10
Grid	: Beatrice	Tx Loop	: BEM2
Date	: Sep 21, 1999	File name	: MS10Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:3000



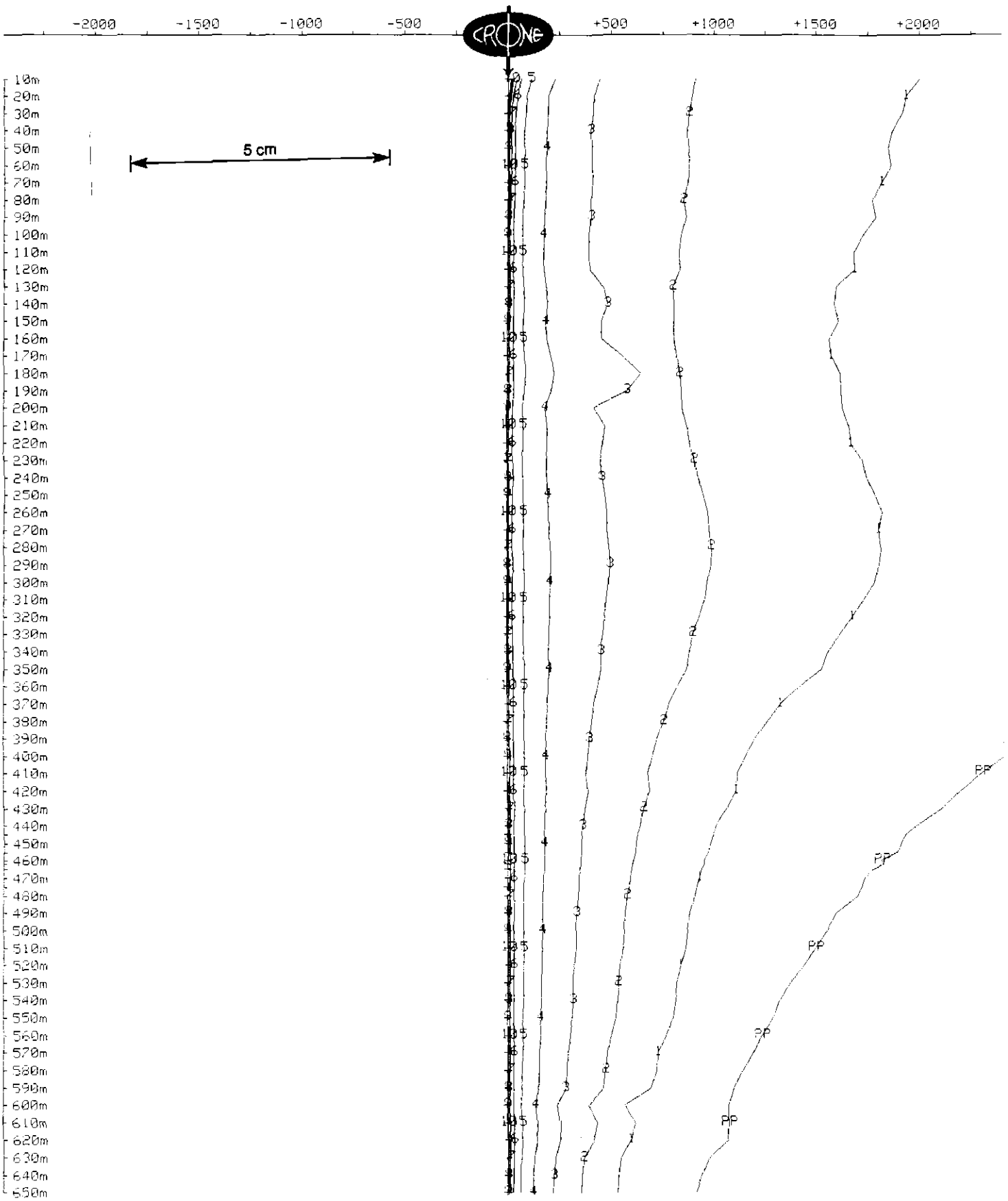
645542

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-10
Grid	: Beatrice	Tx Loop	: BEM2
Date	: Sep 21, 1999	File name	: MS10Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 10 of 17 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 250 nT/



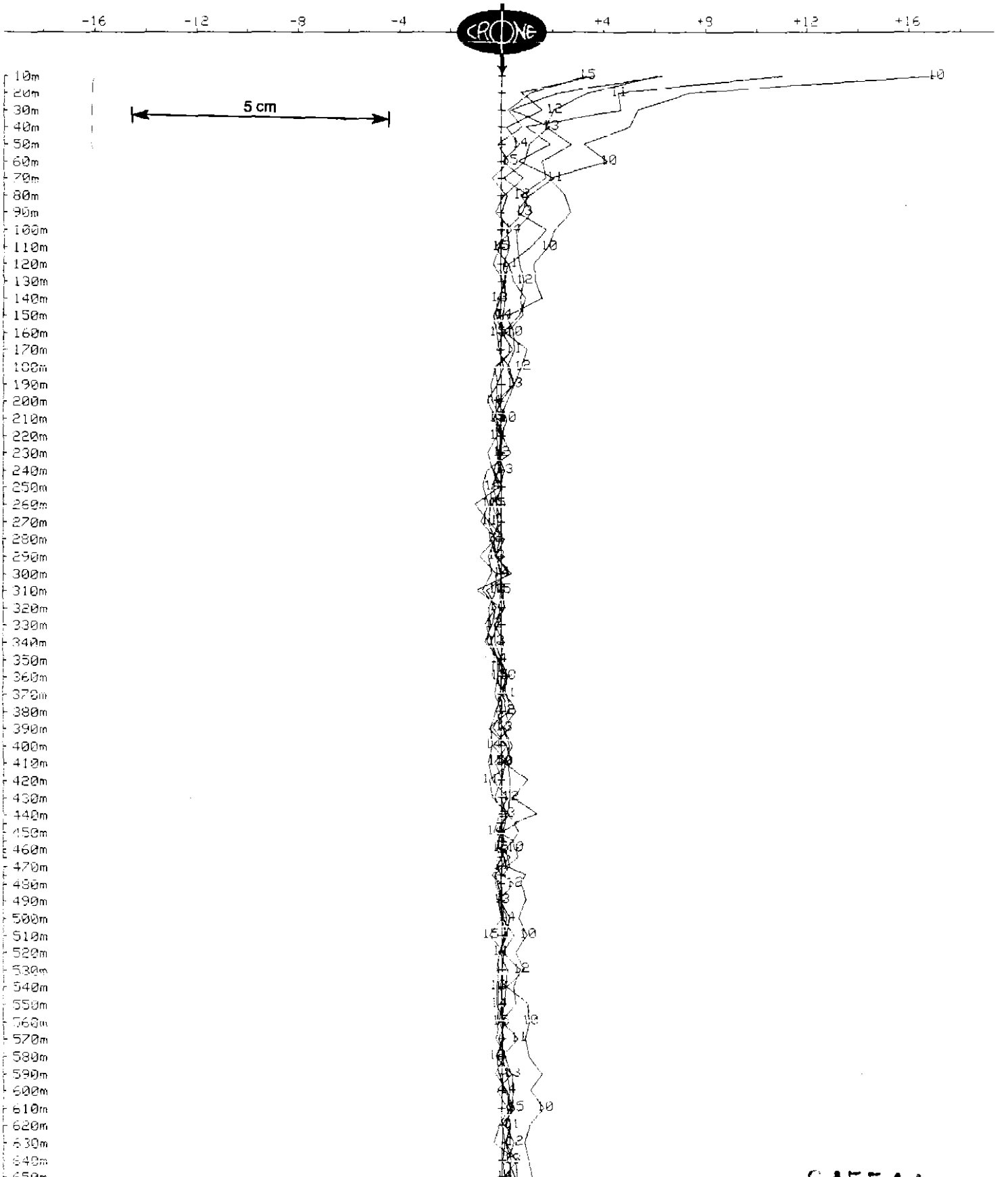
645543

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-10
Grid	: Beatrice	Tx Loop	: BEM2
Date	: Sep 21, 1999	File name	: MS10Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/s



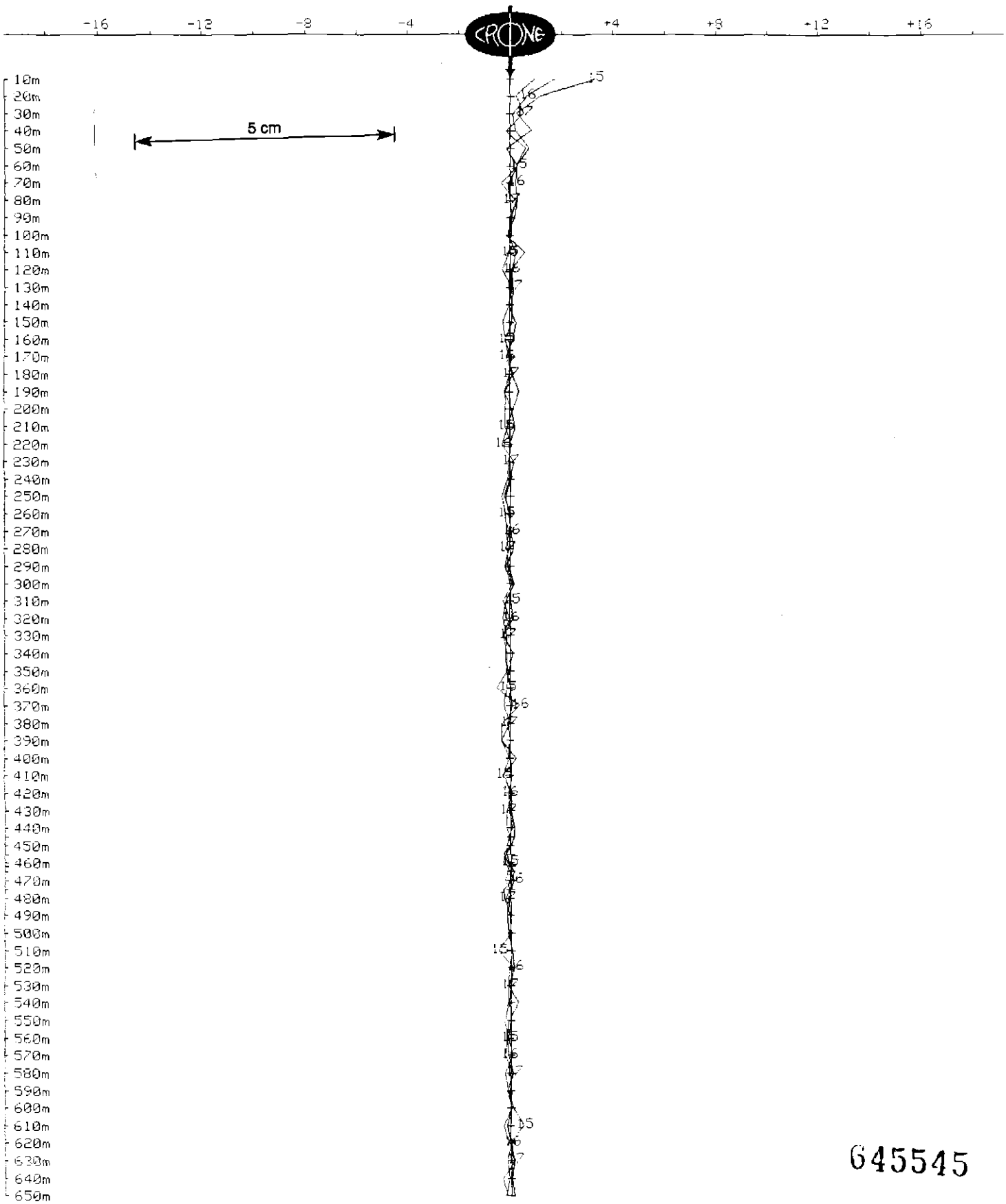
645544

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Pasminco Exploration**	Hole	: **MS-10**
Grid	: **Beatrice**	Tx Loop	: **BEM2**
Date	: Sep 21, 1999	File name	: MS10Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 3 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/



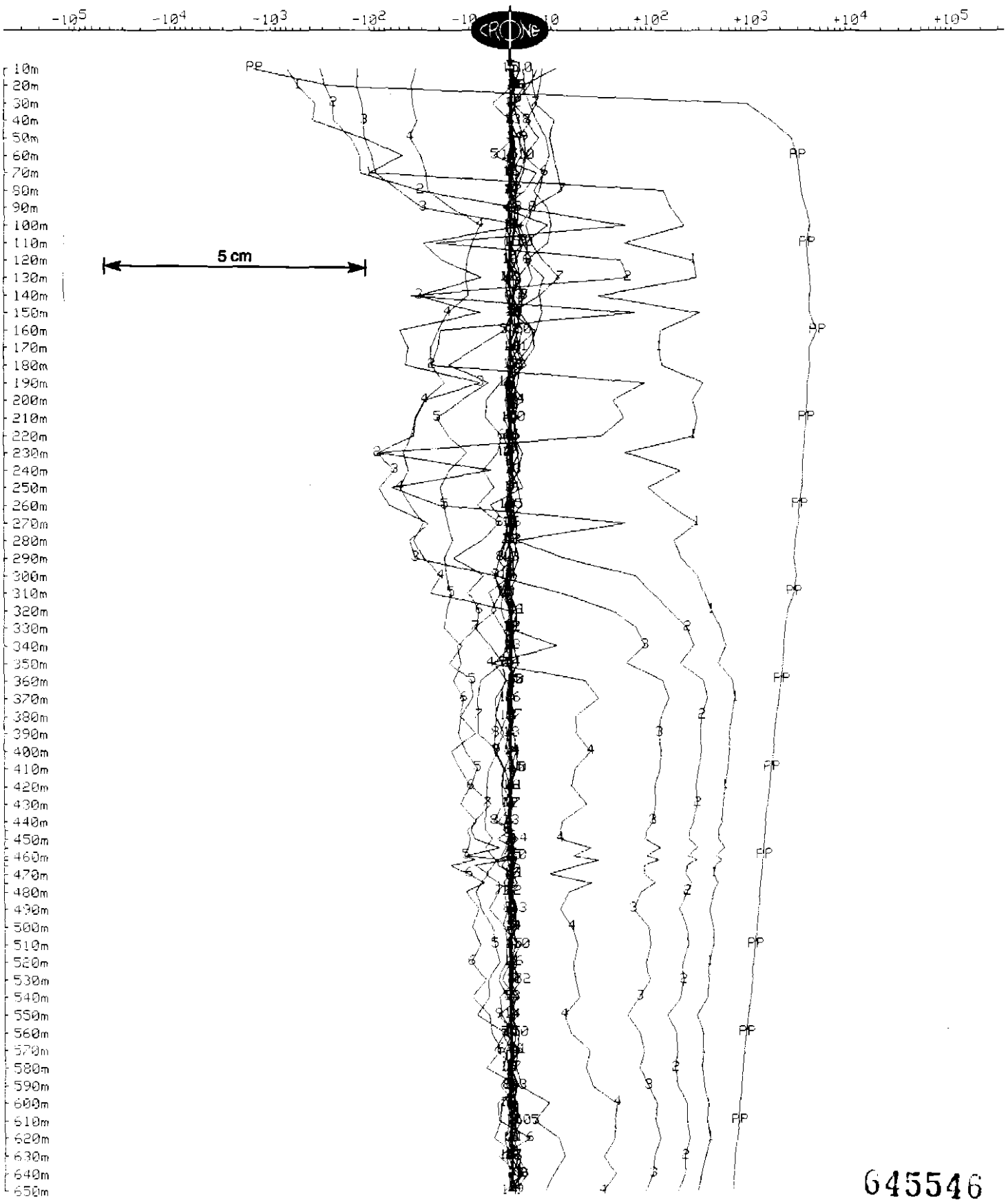
645545

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-10
Grid	: Beatrice	Tx Loop	: BEM2
Date	: Sep 23, 1999	File name	: MS10XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #6
X COMPONENT dBx/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:3000



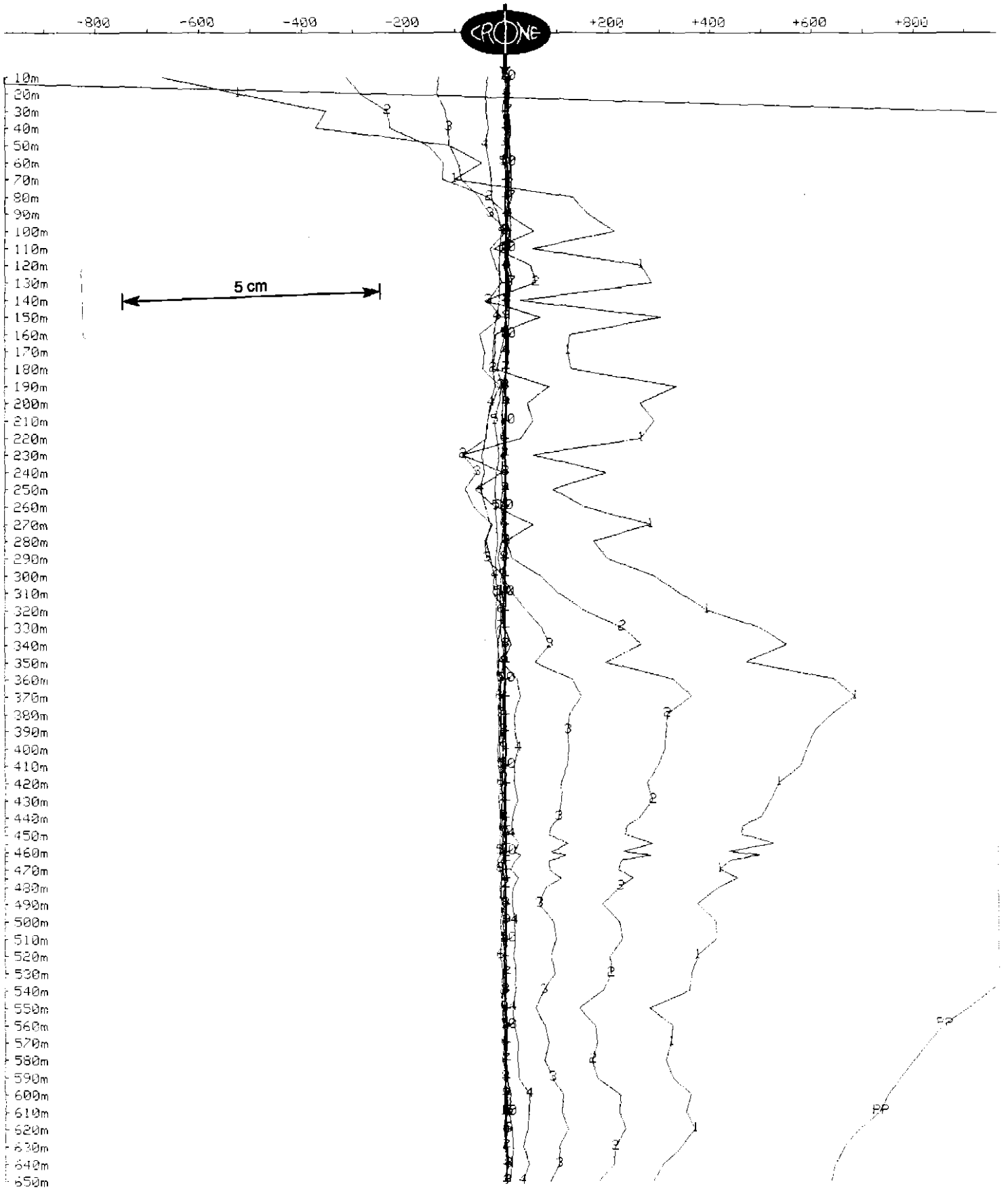
645546

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Pasminco Exploration**	Hole	: **MS-10**
Grid	: **Beatrice**	Tx Loop	: **BEM2**
Date	: Sep 23, 1999	File name	: MS10XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #6
X COMPONENT dBx/dt nanoTesla/sec - 10 of 17 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 100 nT/



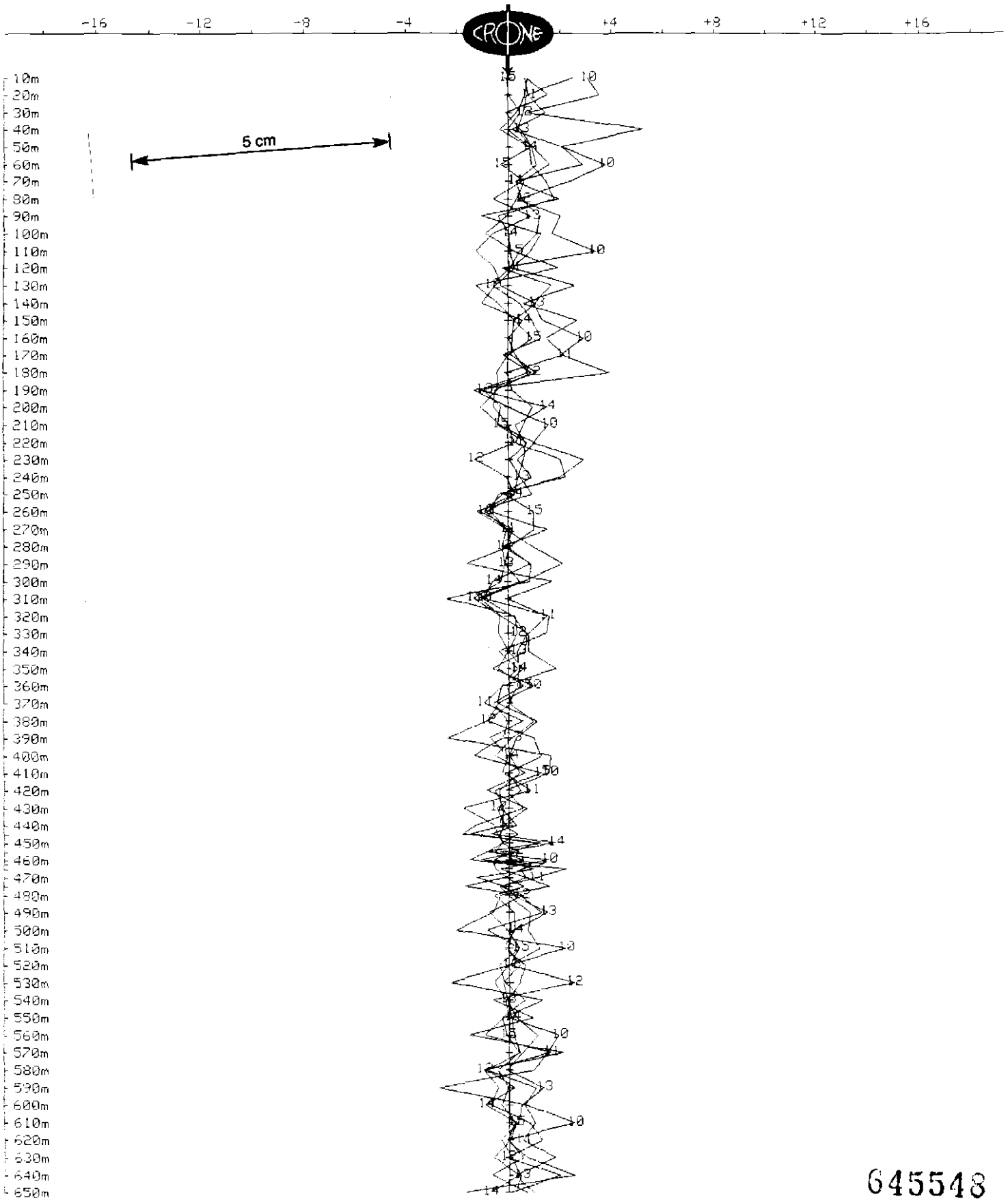
645547

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Pasminco Exploration**	Hole	: **MS-10**
Grid	: **Beatrice**	Tx Loop	: **BEM2**
Date	: Sep 23, 1999	File name	: MS10XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #6
X COMPONENT dBx/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/s



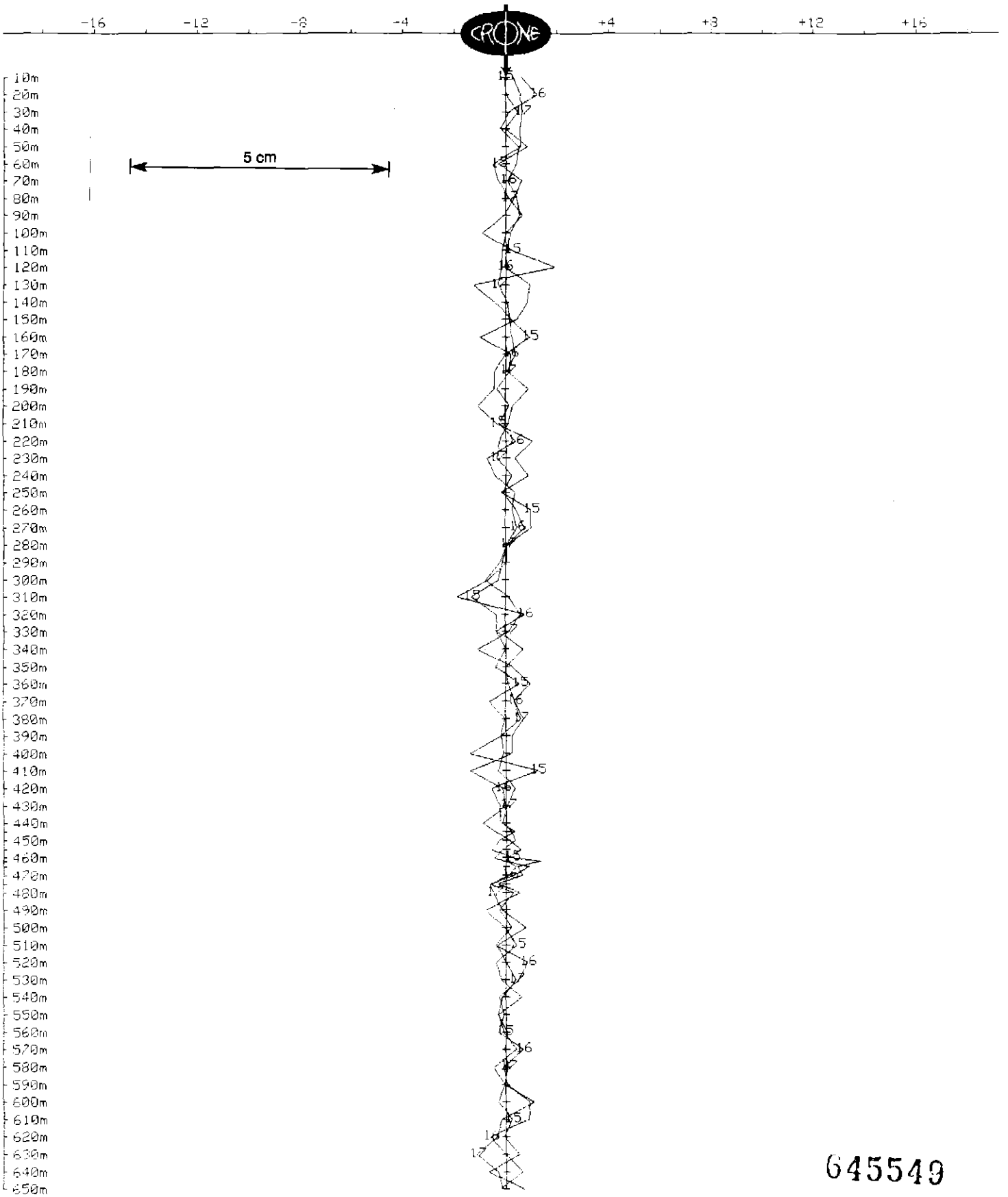
645548

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Pasminco Exploration**	Hole	: **MS-10**
Grid	: **Beatrice**	Tx Loop	: **BEM2**
Date	: Sep 23, 1999	File name	: MS10XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #6
X COMPONENT dBx/dt nanoTesla/sec - 3 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/



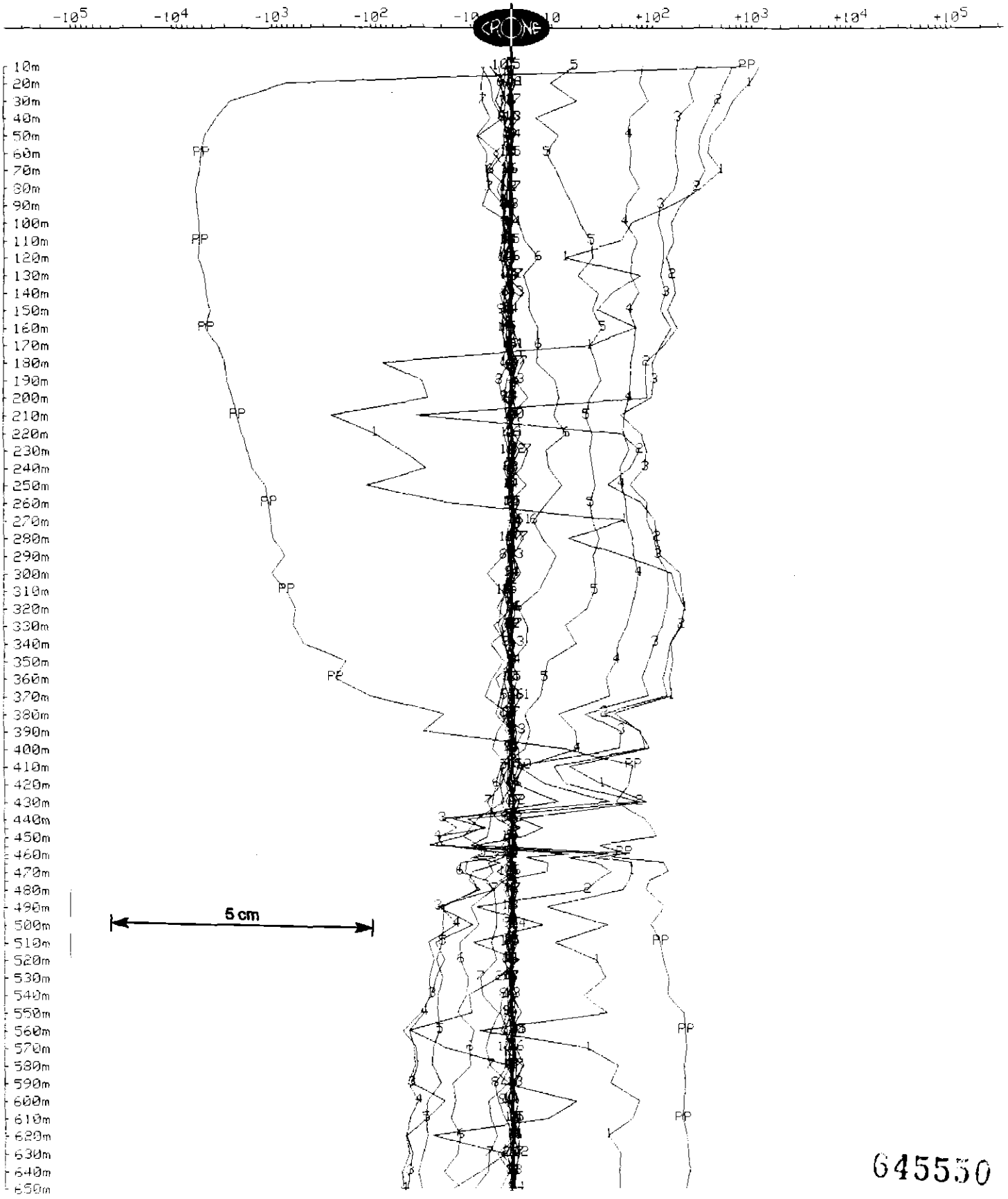
645549

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-10
Grid	: Beatrice	Tx Loop	: BEM2
Date	: Sep 23, 1999	File name	: MS10XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #6
Y COMPONENT dBy/dt nanoTesla/sec - 17 of 17 channels and PP

Scale: 1:3000



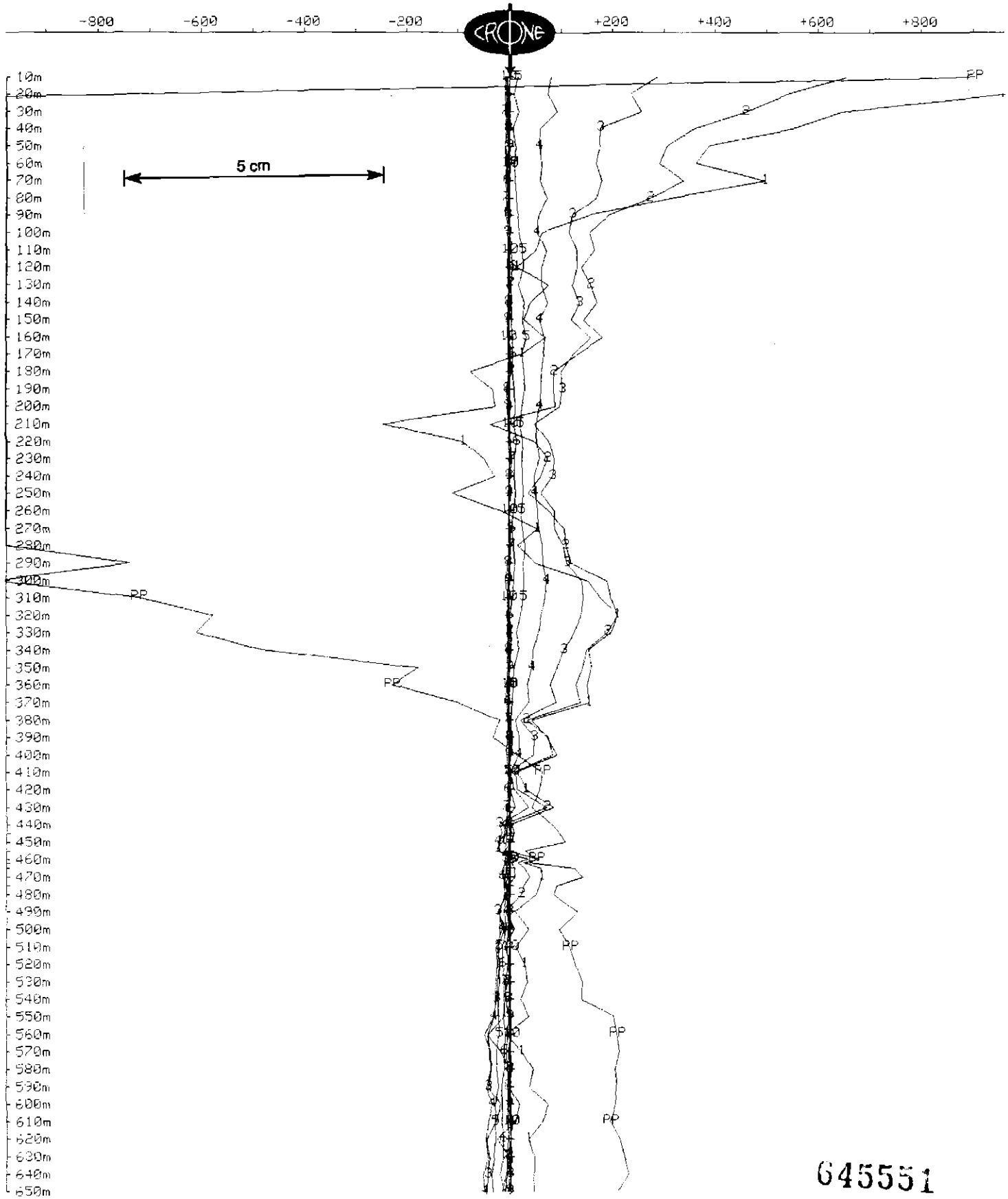
645550

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-10
Grid	: Beatrice	Tx Loop	: BEM2
Date	: Sep 23, 1999	File name	: MS10XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #6
Y COMPONENT dBy/dt nanoTesla/sec - 10 of 17 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 100 nT/



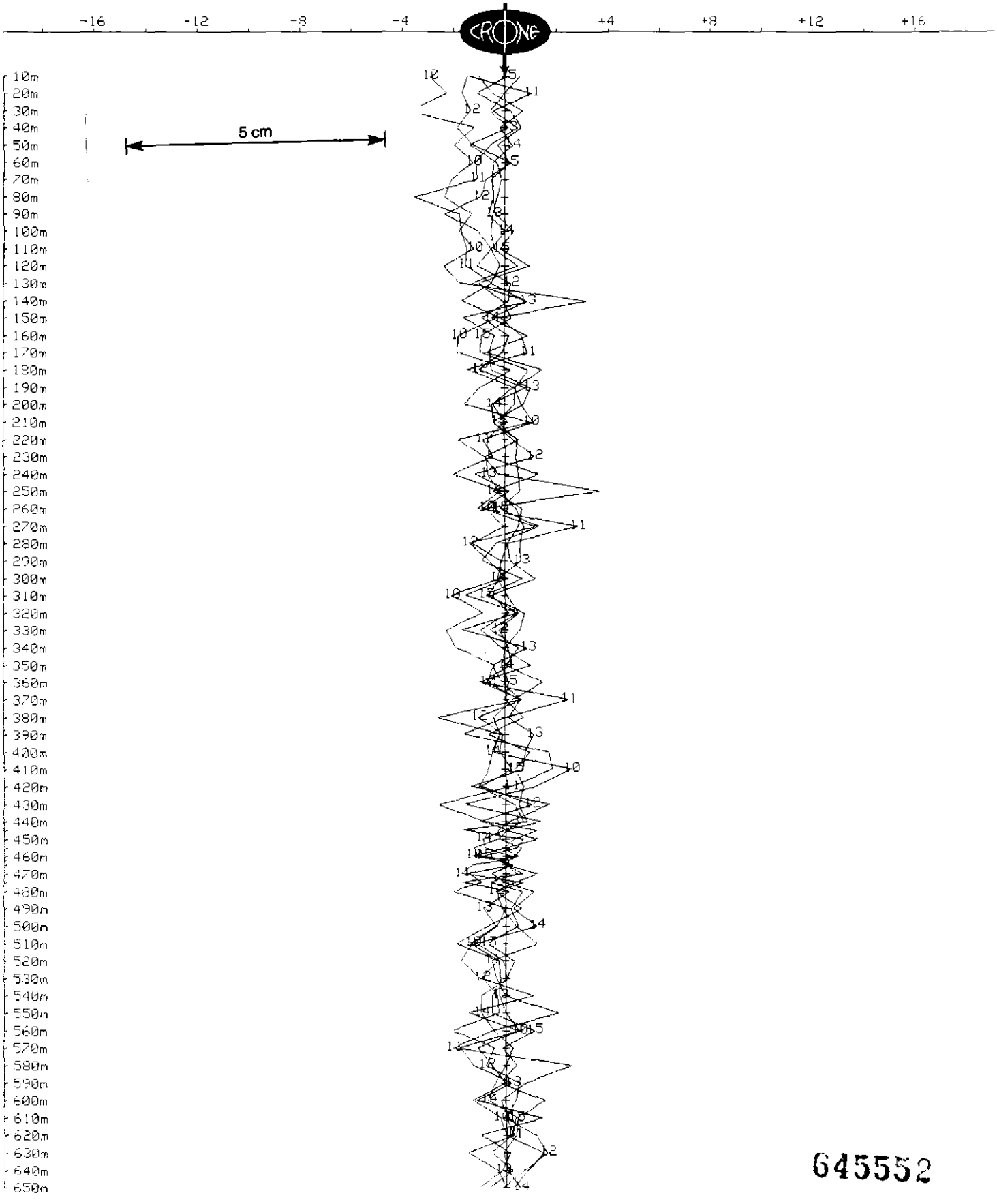
645551

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Pasminco Exploration**	Hole	: **MS-10**
Grid	: **Beatrice**	Tx Loop	: **BEM2**
Date	: Sep 23, 1999	File name	: MS10XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #6
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/



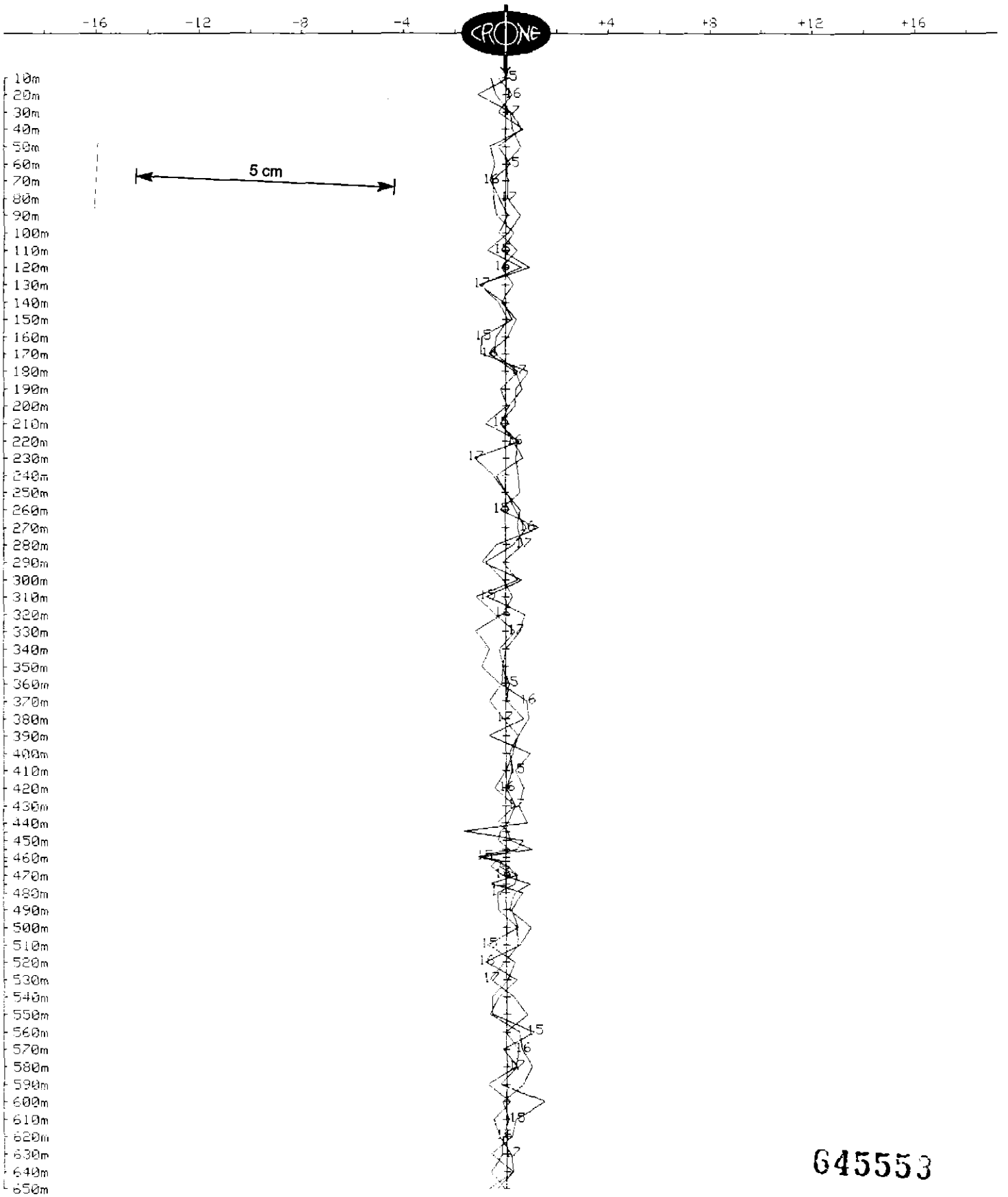
645552

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-10
Grid	: Beatrice	Tx Loop	: BEM2
Date	: Sep 23, 1999	File name	: MS10XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #6
Y COMPONENT dBy/dt nanoTesla/sec - 3 of 17 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT/

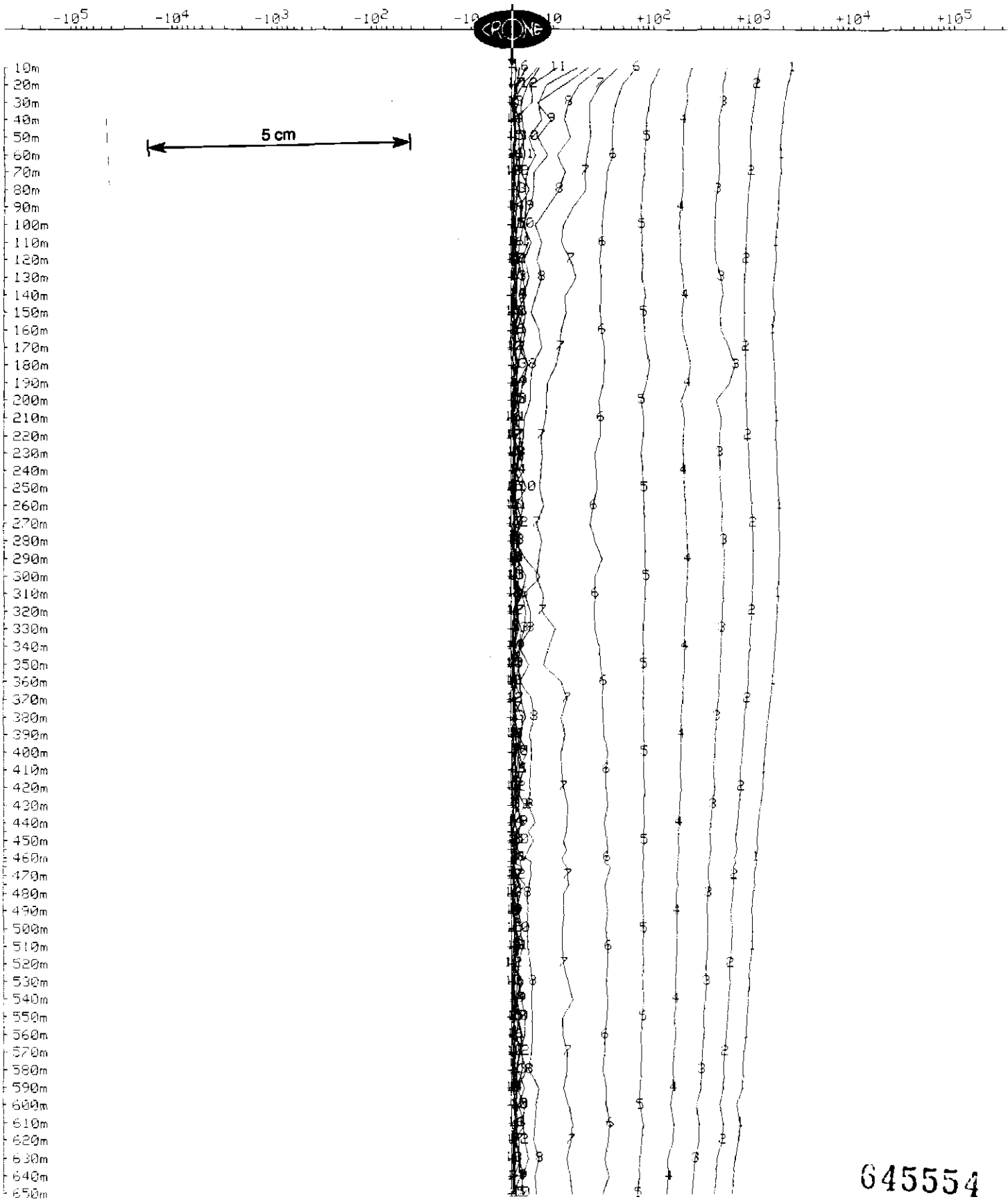


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: MS-10
Grid	: Beatrice	Tx Loop	: BEM2
Date	: Sep 23, 1999	File name	: MS10XYZ.PEM

Data Corrected for Probe Rotation using Orientation Tool #6
TOTAL FIELD dBxyz/dt nanoTesla/sec - 17 of 17 channels

Scale: 1:3000



645554

APPENDIX 11

West Sedgwick Prospect

Diamond Drill Logs, WS1-WS8.

645555

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Collars 965/650W, Azimuth 234 dip -70°

Hole ID	WS2	Project	Wreenton
Hole Type	Diamond	Tenement No	EL
Year	1999 w/log of 1977 drill hole	Prospect	West Sedgwick
Geologist	KPD	Date	29/7/99.

m	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
0									
							0-48.5m enormous core loss, only ~7m recovered. Orange brown - grey, well sorted substone or ashy volcanic. Totally ondyed to 39m, partially ondyed to 48.5m.		
10									
20									
30									
40									

645556

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS2	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
40									
50							48.5-62.7m medium grained, weakly cleaved ashy- silty volcaniclastic, white slightly elongated clasts 3-5mm x 1-2mm are probable feldspars and 2mm black laths on a mafic phase. This unit is a slightly coarser version of 0-48.5m		
60									
							62.7 – 71.85 milky qtz vein and minor qtz cemented ashy volcanic breccia.		qtz
70									
							71.85 – 81m medium - coarse grained lithic sandstone. Moderately cleaved. Subrounded clasts to 10mm of milky quartzose clasts and dark like grey-black shale clasts to 15mm in a light grey matrix. From 0-81m is a single graded reverse flow unit		
80									

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS3	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
80									
90									
100									
110							105.4 - 117.5m Highly altered dark light orange K feldspar altered lithology the same as above		
120							117.5 - 138.8m — As above	K	

645558

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS3	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
120									
130									Py
140							138.8 – 144.5m Interbedded finely bedded grey slate / black slate with lithic cryst tuff sandstone as above		
							144.5 – 152.2m lithic cryst tuff sandstone as above with larger clasts and pebble layers & 5mm of siltstone		
150								wk Ch	
							152.2 – 161.5m moderately deformed black slate.		
160									

645559

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS2	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

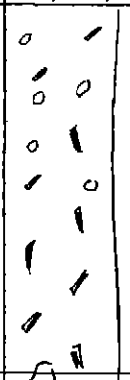
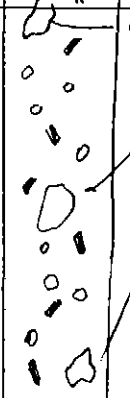
Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
160						mm			
180							164.8 – 173.2m graded mass flow unit. Basal part of the unit contains siliceous clasts 10cm and also black shale clasts top of the unit is finely laminated ashy silt		
							173.2 – 198.8m. Pepperite (phenos to 3mm - see 178.2) and black shale / shaley volcanic pepperite.		
190									
200							198.8 – 199.5m qtz feldspar		

645560

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS2	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
210							199.5 - 224.4m medium grained feldspar hornblende volcaniclastic/lava subrounded silicified feldspars to 3mm and black hornblende clots to 5mm in a dark grey matrix. Occasional calcite filled cavities ≤10mm are probably amygdaloids ⇒ lava	weak K-Spar	
220							This unit is veined by qtz-feld-chlorite veinlets and is locally K-feldspar altered.		
224.4m									

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DIAMOND DRILL HOLE LOG

collar 845 150E,
PASMINCO EXPLORATION ~N 5346100N 380200E

Hole_ID	WS3.	Project	Queenstake
Hole_Type	Diamond	Tenement_No	
Year	1999 redrill of a 1977 hole	Prospect	West Sedgwick
Geologist	KPD	Date	29/7/99.

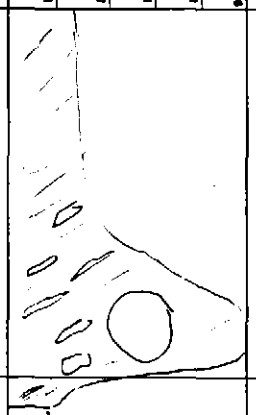
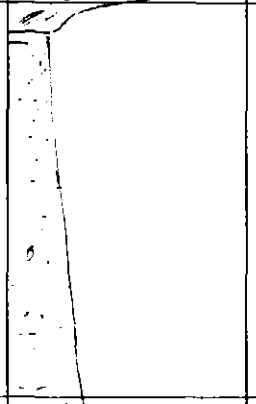
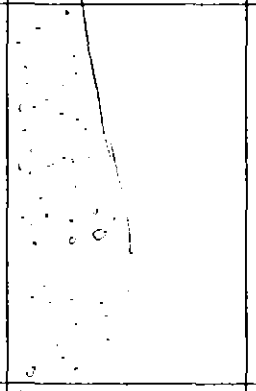
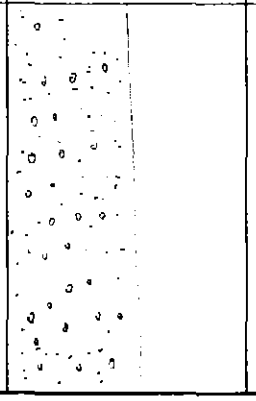
Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
40							0.0 – 33.6m. Lithic - pumice volcaniclastic sandstone, light grey, lithic angular to 3cm and wispy weakly chlorite altered dark (flattened pumice) in a light grey matrix.		
20									
30									
40							33.5 – 105.4m Series of rocks fining graded mass flow units, coarse basal portion are lithic clast & 50mm including volcanics and black shale in a grey matrix [illegible]		

645562

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS3	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
50							a little sandstone [illegible]		
60									
70									
80									

645563

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS3	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
80									
90									
100									
110							117.5m		
120							138.8m	K	

645564

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS3	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
120									
130									Py
140							138.6 – 141.5m		
150							148.0 – 150.2m	Ch	
160							157.2 – 161.5m		

645565

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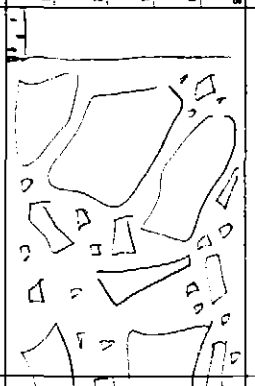
DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS5	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
160							161.5 – 231.8m. Feldspar porphyritic andesite/dacite hyaloclastite, fine hyaloclastic matrix with feldspar phenocrysts. From 224.5 – 231.8 the unit grades to altered pyroxene and hyaloclastic breccia.		
170									
180									
190									
200									

645566

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS3	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
200						mm			
210									
220									
230							slab		
240							237.7 – 241.8 m		

645567

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS3	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	29/7/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
240						mm			
280									
254.7m							254.8 – 259.7 Light green fine grained [illegible]		

645568

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS4	Project	Queen Strain
Hole_Type	Diamond	Tenement_No	
Year	1999 relog of a 1986 drillhole	Prospect	West Sedgwick
Geologist	KPO	Date	30/7/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
0						mm			
10							0-12m. Green Conglomerate Screen.		
20							12-33m Orange brown deeply weathered and oxidized andesitic volcanic. (This unit is almost certainly an andesitic hyaloclastite) remnant glass/ are almost certainly feldspar phenocrysts		
30									
40							-33-46.9m Partially oxidized feldspar (mafic) phyric volcanic, again this is probably the same as +46.9m a hyaloclastite. This unit is magnetic		

645569

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID WS1	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

Depth	Lithology			Alteration	Mineralisation	Graphic Log		
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1 2 4 8 16	preferred std field	preferred std field
40								
			46 9 - 90m dark green hornblende. Feldspar phyric, magnetic andesite lava. Locally hyalobasalt textures are well developed. Towards the base of the unit the groundmass becomes much finer grained - chilled?					
50								
			Mag susceptibility values around 10 cgs units in					
60			places.					
70								
80								

645570

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID WS4	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

Depth	Lithology			Alteration	Mineralisation	Graphic Log		
	Code	Colour	Comments	Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1 2 4 8 10	preferred std field	preferred std field
80								
90								
			90.0 – 100m Non magnetic grey-black feldspar phyric volcanic. Feldspar phenocrysts to 3mm and mostly supported in a dark aphanitic matrix.					
100								
			100 – 117.3m dark green moderately foliated fine grained volcanic clastic. Contains dark chlorite clasts to 2mm. This unit is moderately-strongly magnetic with mag susc values of 3 – 8 $(SI)^{-3}$ units.					
110								
			117.3 – 135.9m Badly broken ?similar as above, locally brecciated thru fault					
120								

645571

4/6

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID WS4	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

Depth	Lithology Code	Lithology Colour	Comments	Alteration Up to 3 codes w. intensities (1-3)	Mineralisation Up to 3 codes with %	Graphic Log 2 4	preferred std field	preferred std field
120			Zone: This material is also magnetic, the magnetic susceptibility goes from <1 -> 7 cgs unit, the low values are associated with the more broken core and suggest that there was magnetite destructive fluids travelling through the fault.			≈ ≈ ≈		
130			135.9 - 181.8m dark grey-green fine ground mass 135.9 - 158 the unit has a subtle brecciation with dark and light green areas which is interpreted as a hydrothermal. This unit is also strongly magnetic, from 135-164 it has 20% by number of pink $MnCO_3$ veins.			≈ ≈		Mn_3O_4 $MnCO_3$
140								
150			From 158 - 181.8 the unit is non magnetic and loses the subtle brecciation. This may be a chloritic zone. From 167 - 181.8 the unit is cut by 3 - 10cm pink $MnCO_3$ veinlets.					
160								

645572

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID	WS4	Project	
Hole_Type		Tenement_No.	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Comments	Alteration (Up to 3 codes w intensities (1-3))	Mineralisation (Up to 3 codes with %)	Graphic Log	preferred std field	preferred std field
160								
170								
								$MnCO_3$
180								
			181.8 – 193.8m Pasty brecia with localized pug development Lavi/tuff ~1% original rock in the volcanic clastic interval above.					
190								
			193.8 – 202.7m grey veining volcanic interbedded with black shale. Weakly carbonate altered					
200								

645573

PASMINCO EXPLORATION **DIAMOND DRILL HOLE LOGGING**

Hole_ID LWS1	Project
Hole_Type	Tenement_No.
Year	Prospect
Geologist	Date

Depth	Lithology		Comments	Alteration	Mineralisation	Graphic Log		
	Code	Colour		Up to 3 codes w. intensities (1-3)	Up to 3 codes with %	1 2 4	preferred std feld	preferred std feld
200			201.7 – 209.1m grooded bed, lithic clast rich at top grading down into a fine grained sandstone					
210			209.1 – 210.8m v/f grey carbonate cut by white calcite veinlets					
			210.8 – 229.8m Reddish brown, hematite altered magnetic feldspar phyric volcanic (lava) cut by several 20-25cm wide zone of white - hematite rich red carbonate. Mag Susc typically lower 10 - 12.5 SI units	he				
229.8			229.8m (EOH).					

645574

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS6	Project	Queenstown
Hole_Type	Diamond	Tenement_No	EL 5/98
Year	1999	Prospect	West Selgovia
Geologist	KPD	Date	10/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
120							0 – 147m no core, Pre-collar,		
140									
							147 – 161.6m Dark green fine grained weakly altered mafic andesitic volcanic, lava flow. The unit is aphyric with values of 2-5 ccmm. The unit is cut by abundant white and pink carbonate, the unit carbonate is partially silicified. The unit is Sample > WS4		cb
160							210.8 – 229.8m		

645575

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WSG	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
160						mm			
							161.6 – 178.8m. Well sheared, green ashy andesite volcanic. The core is coated with recent precipitation of white-buff brown oxides after pyrite. This unit is badly broken / faulted		
170									
							178.8 – 212.4m		
180							Green-feldspar phyric (feldspar phenocrysts to 2-3mm) andesitic volcanic, [illegible] varying [illegible] minor pyrite veining.		
							From 195 – 197m is a coarse hyaloclastite breccia,		
190									
							197.0 – 200.1m badly broken and quartz carbonate veined andesite, minor pyr		
200									

645576

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS6	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
200									
210									
							- 212.4 - 220.1m Puggy, quartz carbonate veined, fault zone, 1m to 3m thick rubbly shale w andesite and its bottom in quartz crystal sandstone.		
220									
							220.1 - 226.7m Schistose quartz feldspar crystal sandstone (Constock Tuff ?), fine cut w relict clasts entirely composed of 1-2mm quartz and feldspar.		
230							226.7 - 236.4m Melange of interwoven black shale / rocky volcanic quartz feldspar clasts ? and feldspar crystal sandstone, fine with mm intervals, and also as breccias with a black shale matrix.		
240							236.4 - 253.8m green grey rocky volcanic with several intervals of multilithic conglomerate.		

645577

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS6	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
240						mm			
							a hornblende phyric lava from 240.5 – 241.2.		
250									
							– 253.8 – 263.2m quartz [illegible]		
260									
							263.2 – 270.8m. [illegible]		
270									
							270.8 – 283.0m black shale containing 5–10% 2–3mm carbonate nodules, very variable bedding, contains abundant blebs of pyrite.	50 / 012 50 / 027	
280									

645578

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS6	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
280						mm			
							283.0 – 294.3m Interbedded fine pyrite arkosic volcanic, black shale and lithic conglomerate/breccia. Clasts in the breccia are dominantly quartz volcanic with minor black shale clasts.	Jo 62	
290									
							294.3 – 298.5m Light green feldspar phyric? tuff – black shale breccia + pyrite. 298.5 – 309.6m similar unit to 283.0–294.3m.		
300									
310							309.6 – 315.8m Thin unit similar to 283–294.3m but v dominantly quartz volcanic clasts (to 40cm) and a silicified quartz vein with minor shale and also minor feldspar sandstone.		
							315.8 – 323.8m Mottled pink (feldspar) grey (shale) lithic sandstone almost feldspar crystal lithic sandstone. ROSEVALE LYNCHFORD MEMBER.	weak Ch	
320									

645579

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS6	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
320						mm			
							323.8 – 339.8m mottled green-pink quartz (3-4mm) & feldspar (2-3mm), silicified Volcanic clasts to 50mm typically angular, but some Subrounded in a light green matrix. The unit looks in places like an auto breccia but at 330.2-330.5m it is clearly a monomict breccia	wk Ch	
330									
340							339.8 – 343.0m Black shale cemented breccia as above and pyritic sediment.		
							343.0 – 351.2m. Mottled green + grey pink quartz feldspar crystal Volcaniclastic with a wispy light green matrix.		
350									
							351.2 – 355.5m as at 323.8-339.8m.		
							355.5 – 366.1m light/dark green quartz feldspar Volcaniclastic → replacements		
360									

645580

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS6	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
360						mm			
							366.1 – 377.6m Orange-green – green variably altered (oxidation diagenetic) feldspar crystal lithic conglomerate.	K (Na)	
370						GLF	From 371.8 – 373.6m the unit is strongly depleted with alignment of pale green chlorite. This is the GLF	ch	
							373.6 – 380.5m Over Cog Conglomerate		
380							380.5m (EOH)		

645581

A112 1/13

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	Queenstown
Hole_Type		Tenement_No	EL 5/98
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
0							0.0 – 70.5m. Large (locally small) light grey fine grained quartz sericite altered volcanic. No quartz phenocrysts. Interbedded with 1-2m light grey ashy volcanics. Whole unit is weakly pyritic.		
10									
20									
30								034 S1	
40								037 S1	

645582

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS 7	**Project**	
Hole_Type		**Tenement_No**	
Year		**Prospect**	
Geologist		**Date**	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
40								27 S_1 037 $S_1 + S_0$? 038 S_0	
50									
60							63.6m quartz carbonate chlorite vein,		
70							- 70.5 – 96.0m As above but strongly pyritic, up to 40% pyrite in places. 76.0 – 157.5m P[illegible] breccia Dark green amygdaloidal lava with amygdales 5mm white and light grey. fine grained		py
80									

3/13

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
80							interbedded shales		
90									
100									
110									
120									

645584

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
120									121.2 Py 121.4
130									129.8 Py 130.1
140								Patchy Si	133.7 134.5
150								Patchy Si	
160							157.5 – 246m. light green with pale green fragmental Volcanics		Pyritic locally 30-40% over 30-40 cm.

645585

5/13

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology		Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
	Code	Colour				mm			
160									
170									
180									
190									
200									

645586

6/13

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology		Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
	Code	Colour				mm			
200									
210								S.	208 17
									10% Py
220									
230									
240									

645587

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID WS7	Project
Hole_Type	Tenement_No
Year	Prospect
Geologist	Date

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
240									
							-246.0 – 290m. dark green feldspar crystal volcanic, similar to the above unit (gradational contact) but higher proportion of feldspar (70+%) and large rare lithic clasts, the unit became sheared and sericite altered. Clasts are silicified aphyric volcanic		
250									
260									
270									
280									

645588

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DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
280									
290							Faulted contact, 288-290m.		
							290-322.1m — light grey feldspar crystal volcanics, variably (to 5%) pyrite; strongly cleaved 299.5 - 306.5		
300									296.5
									1 3% py.
									py
									py
310									
320							317.5 - 322.1m. Strongly veined and kaolinite stained.		

645589

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

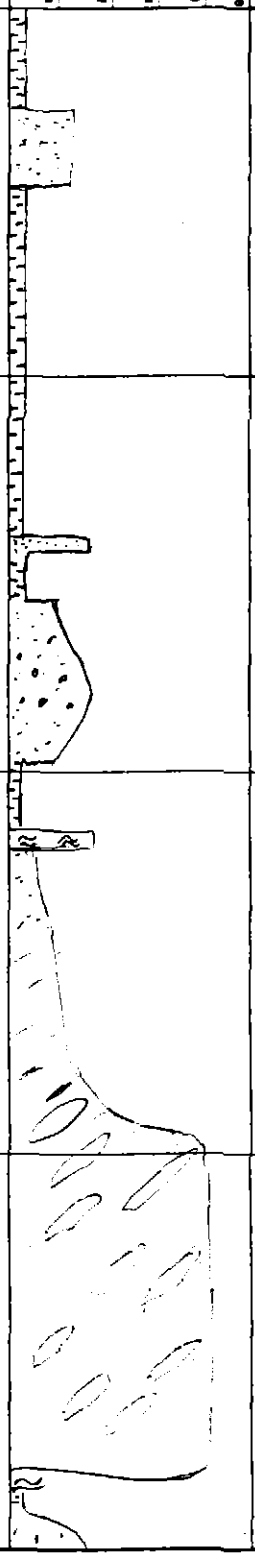
Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
330							322.1 – 332.1m. Blue-grey ashy siltstone/volcanic minor quartz veining and pyrite. (This is probably the fine grained version of 337.1 – 354.2m)		
340							332.1 – 337.1m broken fault zone with fault pug from 332.1 – 332.6m. 337.1 – 354.2m. Blue-grey feldspar crystal (in coarser sections) volcanic. Locally strongly pyritic with py || to Si.		py
350								Si / 34	py 34 / B
360							354.2 – 365.0m Dark bedded black shale and light grey feldspathic silt/sandstone	054 / Si	

645590

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
360								So 038	
							365.0 – 374.3m Black shale.		
370									
							374.3 – 382.0m black shale interbedded with siltstone, lithic sandstone. 30cm pug fault at base of unit.		
380									
							382.0 – 439.0m green grey elongate clasts 1 30mm x 5mm in a light green schistose matrix. The foliation has been accentuated by deformation, the clasts have been elongated where as the matrix has wrapped around the clasts.		
390									
							Occasional black shale clasts also		
400							faulted contact		

645591

11/13

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
400									
410									
420									
430									
440									

435.0 – 441.1m As above but some saturated clasts as well as the elongate ones

645592

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
440						mm			
							441.1 – 443.5 m Deformed black shale		
							443.5 – 455.0 m light grey feldspar crystal (2 mm) quartz? (0.3 mm) volcanic	Cb spots	
450									
							455.0 – 499.2 m (EOH)		
							Ag at 382.0 – 435.0 m		
460									
470									
480									

645593

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS7	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
480						mm			
490							499.2m (EOH)		

645594

1/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	Queenstown
Hole_Type	Diamond	Tenement No	
Year	1999 relog	Prospect	West Sedgwick
Geologist	KPD	Date	17/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
0							0.0 – 31.7m Red-orange (above Bx) to dark grey limonitic/pyritic fine grained ashy volcanic		limonite
10									
20									
30							– 25.3m Bx,		30% py. 27-1-28
40							31.7 – 35.4m dark grey milky quartz veined siliceous? Very similar to MQ at depth 35.2 – 62.0m green green + salmon pink quartz crystal Sericite schist	Si	

645595

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	17/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
40									
50									
60									
70							62.0 – 64.2 m broken fractured zone, upper contact at 020 → RCA 64.2 – 78.5 m as at 35.2 – 62.0 m.	contact 020	
80							78.5 – 94.5 m		

645596

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS 8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	17/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
80							Orange - grey limonite stained ashy volcanic interbedded with quartz - sericite volcanic/schist. The unit is bleached and contains numerous milky quartz ± chlorite veins.		
90									
							94.5 – 118.3m Dark grey moderately cleaved ashy volcanic. From 103.2 – 118.3m subrounded and ellipsoids to 8mm but typically 2-3mm are filled with white-pink carbonate. It is interpreted that these are amygdaloids. ⇒ lava		
100									
110									
120							118.3 – 153.1m		

645597

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	17/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
120							Grey green quartz sericite volcanic / schist		
130									
140									
150									
160									

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	17/8/89

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
160							153.9 173.9m Orange brown stained strongly pyritic (to 10%) grey sericitic dirty volcanic. Pyrite occurs in zones subparallel to cleavage.	(QZ) S.	Py
170									
180							173.9 — 184.4m green grey moderately cleaved sericite altered medium grained volcanic, no pyrite		
190							184 - 185.9m Fault 185.9 — 196.5m Mottled pink (feldspar) grey (matrix) feldspar crystals 1-4mm 30% in a foliated green sericite matrix.		Py
200							196.5 — 249m fine - medium grained, strongly cleaved sericite (weak) occasionally feldspar		

645599

6/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WL58	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	17/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
200							Typic Volcanic, or feldspar sericite schist/augen schist. Occasional large pink (eg 205m) feldspar		
210								ON S1	
220							214.2–215m – spherically volcanic 215–216.2m broken boudinaged carbonate beds 5–20mm thick		Py
230									
240									

645600

7/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	17/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
240									
							249–253m fine grained pyritic ashy volcanic.	So/015	py
250									
							253–262.4m As at 196.5–249m.		
260									
							262.4–266.9m pyritic ashy volcanic.		Py
							266.9–268.9m light dark green lithic ash. Carbonaceous clay/silt clasts in a grey matrix.	fault (cm) 048	
270							268.9–289.5m light grey ashy siltstone/shale, this unit has a coarse banding/layering which may be bedding. The unit becomes coarser grained downhole.	So/014	
280									

645601

8/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WC8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	17/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
280									
290							289.5 – 316.4m.		
							Green-grey ashy siltstone to coarse grained mudstone. Slightly more cleaved than the above unit.		
300									
310									
320							316.4 – 337.5m light green quartz lapis (clasts 1–4mm) volcanic texture in sericite (weak)		

645602

9/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	18/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
320									
330									
340							337.5 – 399.9m. Similar to the above unit but a much stronger foliation, this unit is a quartz-sericite augen schist.		
350									
360									

645603

10/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	18/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
360									
370									
380									
390									
400									

645604

11/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS 8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	18/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
400							399.9 – 403.9m Pyrite with shale.	S1/033	Py
							403.9–486.2m As at 337.5–399.9m. quartz sericite ± chlorite/anger schist		
410									
420									
430									

645605

12/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	18/8/99

Depth	Lithology		Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
	Code	Colour				mm			
440									
450									
460									
470									
480									

645606

13/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	18/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
480									
							486.2m – 491.2m Cream white grey green carbonate altered and veined breccia. Clasts angular to 25mm and the matrix (20%) is chlorite.		
490									
							491.2 – 564.8m Steel grey fine to medium grained moderately cleaved andesitic? Volcanic, - Contains indiscrete 2-3mm pink clots? after feldspar		
500									
510									
520									

645607

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	18/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
520									
530							From 530 m – 547.6 chlorite cloth (after a mafic phase?) becomes more common		
540									
550							547.6 – 545 – a carbonate/quartz vein is intersected		cb/qtz
560							From 556.5 – 559 – the unit is coarser grained with quartz to 5mm and chlorite cloth		

645608

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	18/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
560									
							• 561.8 – 567.6m Quartz-carbonate chlorite vein with fragments of volcanic [illegible] 567.6m = fault?		
570							567.6 – 577.3m Mottled cream and green sericite chlorite schist/volcanic. Chlorite wispy patches are enclosed by cream white sericite. Occasional [illegible] 1mm (eg 573.5m)		
						fault/shear high strain zone	577.3 – 582.0m. quartz feldspar chlorite vein with fragments of sericite chlorite schist		
580							582.0 – 584.5m and 587.6 – 577.3m.		
							584.5 – 652.1m (EOH) green grey non-descript weakly foliated/sheared fine – medium grained andesitic? volcanic, chlorite veins to 3mm at [illegible]		
590							592 – bedding may be [illegible]		
600									

645609

Andesite Pyroclastic [illegible]

16/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	WS 8	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	18/8/95

Depth	Lithology		Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
	Code	Colour				mm			
600									
610									
620									
630									
640									

645610

17/17

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	W58	Project	
Hole_Type		Tenement_No	
Year		Prospect	
Geologist		Date	18/8/99

Depth	Lithology Code	Lithology Colour	Cu	Pb	Zn	Graphic Log (mm)	Comments	Alteration	Mineralisation
640									
650							— 652.1m (EOH)		

645611

DIAMOND DRILL HOLE LOG

PASMINCO EXPLORATION

Hole_ID	Project
Hole_Type	Tenement_No
Year	Prospect
Geologist	Date

Depth	Lithology		Cu	Pb	Zn	Graphic Log	Comments	Alteration	Mineralisation
	Code	Colour				mm			

645612

drillog

APPENDIX 12

LAKE DORA PROSPECT

Rock Chip Assay Results

SampleID	Sample_Type	UTM_East	UTM_Nort	UTM_Grid	Sampled_B	Date_Sampled	Ag	Al	As	Au	Ba	Be	Bi
274726	ROCKCHIP	385550	5363780	AMG66_55	KD	29-Jul-98	0.1	13137	193	0.04	284	1.2	1.4
274727	ROCKCHIP	385660	5363875	AMG66_55	KD	29-Jul-98	0.2	52673	298	0.04	2902	2.3	0.8
274728	ROCKCHIP	385895	5363780	AMG66_55	KD	29-Jul-98	0.2	60031	118	0.05	1402	1.1	1
274729	ROCKCHIP	385990	5363950	AMG66_55	KD	29-Jul-98	0.4	55685	37	0.04	1518	1.0	1.0
274730	ROCKCHIP	386030	5364240	AMG66_55	KD	29-Jul-98	0.2	56477	32	0.09	756	1.2	0.7
274731	ROCKCHIP	385725	5363676	AMG66_55	KD	29-Jul-98	0.1	42319	329	0.05	6503	1.7	1.3

SampleID	Bl	Ca	Cd	Ce	Co	Cr	Cs	Dy	Er	Eu	Fe	Ga	Gd
274726	1.4	138	0.2	38.58	3	116	62.76	5.0	2.80	0.82	457000	7.9	4.2
274727	0.8	327	0.7	67.00	11	22	97.06	3.6	2.20	0.61	39031	19.1	4.0
274728	1	299	0.5	105.4	10.7	44	116.17	7.9	4.5	1.89	43392	17.2	8.7
274729	1.0	1262	0.5	132.62	6	12	32.16	4.1	2.30	1.62	40386	15.0	6.0
274730	0.7	74	0.4	80.83	12	76	63.13	2.9	1.80	0.82	28979	17.7	3.3
274731	1.3	1245	0.5	111.88	18	14	85.22	5.2	3.00	0.71	26020	20.7	6.2

SampleID	Hf	Ho	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb	Nd
274726	0.6	1.0	9900	14.47	4.4	0.3	1310	5762	2.2	89	2.0	16.0
274727	3.3	0.7	33700	30.13	10 8	0.4	4325	37391	0.9	311	5.2	24.0
274728	3.4	1.56	43800	51.14	11.3	0.7	6800	15	0.3	417	6.6	46.8
274729	3.7	0.8	42100	65.60	5.3	0.5	4270	357	0.9	450	5.1	54.9
274730	3.3	0.6	38200	42.00	7.4	0.4	5935	214	0.9	261	5.8	31.7
274731	2.5	1.0	33100	49.10	9.7	0.5	3345	98551	21.7	473	4.5	36.6

SampleID	Ni	P	Pb	Pd	Pr	Pt	Rb	Sb	Sc	Se	Sm	Sn	Sr
274726	4	45	40	-0.01	3.87	-0.05	101.75	337.9	4	-1	3.7	2.6	11.9
274727	12	186	54	-0.01	6.60	-0.05	271.11	271.1	10	-1	4.6	3.2	53.2
274728	6	293	58	-0.01	11.06	-0.05	349.7	21.6	14	1	9.2	3.9	52.3
274729	2	359	41	-0.01	14.67	-0.05	283.74	18.5	10	-1	9.1	4.5	53.0
274730	6	76	33	-0.01	8.78	-0.05	365.97	25.4	12	-1	5.1	4.6	12.3
274731	8	385	135	-0.01	10.13	-0.05	216.43	408.9	8	3	6.8	2.8	103.2

SampleID	Ta	Tb	Te	Th	Ti	Tl	Tm	V	W	Y	Yb	Zn	Zr
274726	0.5	0.69	-0.2	3.16	522	1.7	0.36	128	70.2	32.31	2.4	49	20.9
274727	0.9	0.57	-0.2	17.61	2201	4.0	0.32	38	42.9	19.40	2.3	215	107.2
274728	1.1	1.26	-0.2	17.84	2591	4.6	0.63	60	9.6	46.28	4.1	278	114.1
274729	0.7	0.72	-0.2	16.92	1988	2.4	0.38	46	12.3	23.31	2.7	202	124.6
274730	0.9	0.46	-0.2	12.03	1918	3.3	0.30	36	11.7	15.90	2.2	324	106.4
274731	1.8	0.86	1.6	15.75	1330	4.2	0.43	54	111.5	28.09	2.9	202	85.0

SampleID	Sample_Type	UTM_East	UTM_North	UTM_Grid	Sampled_By	Date_Sampled	Ag	As	Au	Ba	Bi	Cd
274742	ROCKCHIP	387760	5353950	AMG66_55	KPD	02-Sep-98	9		0.08			
274743	ROCKCHIP	387760	5353950	AMG66_55	KPD	02-Sep-98	7		0.04			
274744	ROCKCHIP	386860	5356490	AMG66_55	KPD	02-Sep-98	5.0		0.04			
274745	ROCKCHIP	386780	5356420	AMG66_55	KPD	02-Sep-98	5.0		0.01			
274746	ROCKCHIP	386575	5356620	AMG66_55	KPD	02-Sep-98	7.0		0.11			
274747	ROCKCHIP	386575	5356620	AMG66_55	KPD	02-Sep-98	5.0		0.02			
274748	ROCKCHIP	386575	5356620	AMG66_55	KPD	02-Sep-98	2.0		0.04			
274749	ROCKCHIP	387460	5354710	AMG66_55	KPD	02-Sep-98	8.0		0.11			
274750	ROCKCHIP	387500	5354580	AMG66_55	KPD	02-Sep-98	7.0		0.15			
274751	ROCKCHIP	387560	5354490	AMG66_55	KPD	02-Sep-98	12.0		0.39			
274752	ROCKCHIP	387560	5354490	AMG66_55	KPD	02-Sep-98	6		0.07			
331901	ROCKCHIP	387860	5354020	AMG66_55	AMcN	12-Jan-99	10.7	73	0.05	1870	7.5	0.7
331902	ROCKCHIP	387940	5353545	AMG66_55	AMcN	12-Jan-99	3.4	18	0.01	135	2.7	0.7
331903	ROCKCHIP	387940	5353545	AMG66_55	AMcN	12-Jan-99	1.4	23	0.03		1.7	0.2
331904	ROCKCHIP	387940	5353545	AMG66_55	AMcN	12-Jan-99	1.9	14	0.01	830	2.0	0.4
331905	ROCKCHIP	387940	5353545	AMG66_55	AMcN	12-Jan-99	3.9	9	0.02	1390	3.6	3.2
331906	ROCKCHIP	387735	5353800	AMG66_55	AMcN	12-Jan-99	1.2	33	0.01	820	1.9	0.4
331907	ROCKCHIP	387740	5353800	AMG66_55	AMcN	12-Jan-99	2.4	26	0.01	320	5.9	0.8
331908	ROCKCHIP	387965	5353555	AMG66_55	AMcN	14-Jan-99	89.3	120	0.15	655	188.5	162.0
331909	ROCKCHIP	387965	5353555	AMG66_55	AMcN	14-Jan-99	52.7	99	0.08	730	102.0	96.2
331910	ROCKCHIP	387980	5354135	AMG66_55	AMcN	15-Jan-99	3.0	30	0.01	625	5.4	2.8
331911	ROCKCHIP	387895	5354315	AMG66_55	AMcN	15-Jan-99	2.5	24	0.01	450	4.6	3.5
331912	ROCKCHIP	387875	5354310	AMG66_55	AMcN	15-Jan-99	1	28	-0.01	325	4.4	0.5
331913	ROCKCHIP	387795	5354340	AMG66_55	AMcN	15-Jan-99	0.8	10	-0.01		1.3	0.9
331914	ROCKCHIP	387845	5354305	AMG66_55	AMcN	15-Jan-99	0.7	21	0.01	49	1.0	0.5
331915	ROCKCHIP	387700	5354165	AMG66_55	AMcN	15-Jan-99	0.8	24	0.02	150	1.4	0.3
331916	ROCKCHIP	387620	5354380	AMG66_55	AMcN	26-Jan-99	1.3	13	0.01	140	0.7	2.4
331917	ROCKCHIP	387605	5354390	AMG66_55	AMcN	26-Jan-99	1.0	18	0.01	180	0.7	0.3
331918	ROCKCHIP	387720	5355425	AMG66_55	AMcN	27-Jan-99	2.8	85	0.07	1500	1.2	3.9
331919	ROCKCHIP	387720	5355425	AMG66_55	AMcN	27-Jan-99	4.0	22	0.04	1700	3.5	1.7
331920	ROCKCHIP	387720	5355425	AMG66_55	AMcN	27-Jan-99	7.9	16	0.11	1520	4.2	5.6
331921	ROCKCHIP	387965	5353555	AMG66_55	AMcN	04-Feb-99	3.1	38	0.02	1920	4.2	33.4
331922	ROCKCHIP	387900	5354030	AMG66_55	AMcN	04-Feb-99	9.3	29	0.05	540	3.9	0.3
331923	ROCKCHIP	387255	5355340	AMG66_55	AMcN	09-Feb-99	2.0	43	0.01	1140	2.8	0.9
331924	ROCKCHIP	386805	5355185	AMG66_55	AMcN	09-Feb-99	2.8	75	0.05	1790	1.5	4.2
331925	ROCKCHIP	386805	5355185	AMG66_55	AMcN	09-Feb-99	18.7	40	0.34	255	15.0	25.8
331926	ROCKCHIP	386800	5355615	AMG66_55	AMcN	09-Feb-99	2.0	20	0.02	83	1.7	1.6
331927	ROCKCHIP	386735	5355215	AMG66_55	AMcN	09-Feb-99	14	664	0.04	370	20.9	78.4
331928	ROCKCHIP	386735	5355215	AMG66_55	AMcN	09-Feb-99	63.0	689	0.19	87	92.5	65.1
331929	ROCKCHIP	386770	5355220	AMG66_55	AMcN	09-Feb-99	9.4	85	0.11	1210	6.4	19.0
331930	ROCKCHIP	386770	5355220	AMG66_55	AMcN	09-Feb-99	11.6	62	0.11	280	7.3	5.8
331931	ROCKCHIP	386845	5355385	AMG66_55	AMcN	10-Feb-99	250.0	62000	47.7	53	701.0	3.7

SampleID	Sample_Type	UTM_East	UTM_North	UTM_Grid	Sampled_By	Date_Sampled	Ag	As	Au	Ba	Bi	Cd
331932	ROCKCHIP	386845	5355385	AMG66_55	AMcN	10-Feb-99	4.3	1060	0.26	1040	25.3	5.9
331933	ROCKCHIP	386985	5355565	AMG66_55	AMcN	10-Feb-99	16.0	5160	1.87	725	43.1	0.8
331934	ROCKCHIP	386985	5355565	AMG66_55	AMcN	10-Feb-99	2.8	3190	0.13		10.0	1.1
331935	ROCKCHIP	386970	5355690	AMG66_55	AMcN	10-Feb-99	18.9	778	0.40	345	157.0	1.7
331936	ROCKCHIP	386970	5355690	AMG66_55	AMcN	10-Feb-99	41.0	348	0.34	445	144.0	0.9
331937	ROCKCHIP	386970	5355690	AMG66_55	AMcN	10-Feb-99	5.9	182	0.09	525	18.7	5.4
331938	ROCKCHIP	387025	5355610	AMG66_55	AMcN	10-Feb-99	47.7	146	1.44	125	20.6	94.0
331939	ROCKCHIP	387030	5355535	AMG66_55	AMcN	10-Feb-99	54.4	412	0.12	63	112.5	35.1
331940	ROCKCHIP	387030	5355535	AMG66_55	AMcN	10-Feb-99	87.8	933	0.36	80	122.5	8.3
331941	ROCKCHIP	387030	5355535	AMG66_55	AMcN	10-Feb-99	58.3	4770	0.47		102.5	381.0
331942	ROCKCHIP	388045	5353220	AMG66_55	AMcN	10-Feb-99	16.5	177	0.05	1640	30.1	6.6
331960	ROCKCHIP	386880	5355330	AMG66_55	A McN	03-Jun-99	5.3	98	0.01	2250	7.6	7.8
331961	ROCKCHIP	386880	5355330	AMG66_55	A McN	03-Jun-99	3.9	39	0.02	3200	4.5	13.5
331962	ROCKCHIP	386880	5355330	AMG66_55	A McN	03-Jun-99	10.2	45	0.02	2130	11.5	21.1
331963	ROCKCHIP	387265	5355280	AMG66_55	A McN	03-Jun-99	70.5	-1	0.1	340	810	0.7
331964	ROCKCHIP	387405	5354805	AMG66_55	A McN	03-Jun-99	19.4	75	0.06	315	26.1	28.1
331965	ROCKCHIP	387005	5355720	AMG66_55	A McN	04-Jun-99	0.6	-1	-0.01	2160	1.8	0.8
331966	ROCKCHIP	386940	5355855	AMG66_55	A McN	04-Jun-99	6.6	167	0.12	255	8.3	0.9
331967	ROCKCHIP	386940	5355855	AMG66_55	A McN	04-Jun-99	1.5	2100	0.09	610	51.3	0.5
331968	ROCKCHIP	386940	5355855	AMG66_55	A McN	04-Jun-99	15	5000	0.28	445	418	0.7
331969	ROCKCHIP	386940	5355855	AMG66_55	A McN	04-Jun-99	3.1	1650	0.07	730	60.8	0.4
331970	ROCKCHIP	386940	5355855	AMG66_55	A McN	04-Jun-99	3.9	1200	0.04	65	26.4	1.3
331971	ROCKCHIP	388325	5353240	AMG66_55	A McN	15-Jan-99	0.2	90	-0.01	1020	1.3	0.5

SampleID	Co	Cu	Fe	Mn	Ni	Pb	Sb	Sn	Zn	Comments
274742		391				221			101	Dump sample, Massive pyrite; chlorite aletered;
274743		536				151			131	Dump sample volcanic, chlorite and K-Spar altered, pyritic
274744		37				1962			489	Dump sample qtz-eye volcanic; sericite, chlorite, pyrite altered
274745		1008				143			905	Dump, qtz-eye volcanic; sericite, chlorite, pyrite altered
274746		234				331			405	Dump; qtz-eye volcanic; chlorite; pyrite;
274747		413				63			260	Dump; semi-massive pyrite/magnetite. qtz-eye volcanic; chlorite; pyrite;
274748		87				65			338	Dump; sample of wall rock, qtz-eye vol; chlorite altered, pyritic
274749		3331				375			2074	Dump; Qtz eye volcanic, chlorite altered, pyritic; cpy/malachite
274750		5082				309			564	qtz-eye qs sst; chlorite aletered cpy
274751		7008				204			407	Dump sample from trench; chl vol; chlorite, py
274752		7052				44			424	Dump sample from shaft; chl vol; chlorite; py/cpy
331901	40	3070	75500	2850	-10	368	6.2	6.6	267	Dump sample; Field sample no.1; 10m long trench x 1.5m deep
331902	7	6790	331000	2090	-10	1370	17.3	4.6	943	Dump sample; Field sample no.4; veins in chl altered Q-phyric volc
331903	13	239	412000	4960	-10	877	30.9	5.3	310	Dump sample; Field sample no.4; same pit as Sample 313902
331904	24	300	140000	8490	36	2490	13.3	4.8	952	Dump sample; Field sample no.5; host to veins sampled as Sample 331902, 331903
331905	16	248	72500	5230	30	18200	10.3	4.0	1405	Dump sample; Field sample no.5; similar to previous
331906	7	50	44000	465	-10	2310	6.5	7.4	69	o/c;Field sample no.8
331907	40	93	87000	4120	27	1130	4.2	4.8	458	o/c;Field sample no.9
331908	42	1795	174000	9530	33	18200	13.1	4.6	40000	Dump sample from Lk. Dora mine; Field sample no.10; possibly tr Gn in sample
331909	45	838	106000	115	35	25500	7.1	4.0	23500	Dump sample; Field sample no.10
331910	40	1815	56000	2080	35	574	3.6	4.9	1045	o/c;Field sample no.12
331911	21	269	68500	3290	-10	656	3.3	6.4	1080	Dump sample from small pit, Field sample no.13
331912	28	37	77000	6030	13	165	3.5	3.6	616	Dump sample from small pit, Field sample no.14
331913	7	79	59500	19	-10	205	3.1	5.3	295	o/c;Field sample no.15
331914	28	15	172000	8420	-10	211	2.8	3.4	679	o/c from a small pit; Field sample no.16
331915	42	36	113000	5390	24	84	3.5	3.4	382	Field sample no.17(i) from location 120
331916	33	1795	118000	5310	-10	121	2.0	2.9	871	Field sample no.17(ii) from location 141.
331917	47	1315	86000	3310	-10	36	1.8	2.4	346	Field sample no.18 from location 142
331918	8	103	27000	1660	-10	2600	2.8	2.9	643	Field sample no.20 from location 220, Dump sample.
331919	7	195	24500	2060	-10	8950	2.1	2.7	403	Field sample no.21 from location 220. Dump sample.
331920	8	411	22500	645	-10	10700	2.8	2.8	1665	Field sample no.22, location 220. Dump sample.
331921	20	93	70000	6640	40	4090	6.2	4.2	9250	Field sample no.23, location 46. Dump sample.
331922	12	13800	72500	3670	22	64	4.5	3.2	226	Field sample no.25. Dump sample from adit below location 1
331923	9	453	41000	1390	-10	366	3.6	4.3	338	Field sample no.26, from location 225, dump sample from northern pit.
331924	41	705	211000	3920	10	1490	4.9	12.3	1810	Field sample no.29, from location 235-wallrock to mag. veins(sample 331925)
331925	43	357	398000	3970	-10	3190	4.7	44.8	4150	Field sample no.29, from location 235-mag. veined material
331926	15	331	596000	1790	-10	416	3.7	36.8	620	Field sample no.31 from location 237, magnetite veined-chl alt. volc.
331927	82	1495	106000	665	-10	13000	15.4	10.9	12300	Field sample no.32from location 241, sample of sulphide-rich zone from dump.
331928	87	2980	203000	2110	-10	3730	10.2	7.3	12100	Field sample no.32 from location 241. Dump sample of min. + host rock
331929	40	3210	237000	41	12	1345	3.4	13.5	3050	Field sample no. 33 from location 242. magnetite veined material from dump
331930	41	3580	225000	5090	15	880	3.2	15.3	1505	Field sample no.33 from location 242. Most rock to mag veined zone. Dump sample.
331931	22500	38500	183000	170	105	4580	44.8	15.7	993	Field sample no.34 from location 258, dump sample of high-grade mineralisation

SampleID	Co	Cu	Fe	Mn	Ni	Pb	Sb	Sn	Zn	Comments
331932	318	948	159000	4630	-10	1370	10.1	8.0	2070	Field sample no.35 from location 258, host rock to sample 331931
331933	885	1890	79500	215	-10	431	30.3	9.3	110	Field sample no.37 from location 264, pyritic zone in Q-eye volc.
331934	80	290	92000	1120	-10	244	27.6	6.8	357	Field sample no.38, location 264, host to min of sample 331933
331935	95	1730	198000	2570	-10	1305	7.1	19.8	501	sample
331936	52	432	179000	4550	-10	2480	5.4	11.2	220	Field sample no.40, location 273, dump sample
331937	21	973	104000	32	-10	878	3.8	13.4	1595	Field sample no.41 from location 273, host to sample 331935, 331936, dump sample.
331938	47	32500	235000	2630	36	8500	5.1	6.3	17400	Field sample no.43 from location 274, dump sample of mineralisation
331939	146	4920	188000	5550	-10	4890	4.9	11.2	9330	Feild sample no.45, location 277
331940	238	2560	247000	1850	-10	9510	6.5	9.5	2330	Field sample no.45 from location 277, dump sample of min.
331941	320	5430	131000	1250	-10	21000	15.8	8.1	96500	Field sample no.45 from location 277, dump sample of min.
331942	39	1525	83500	3360	25	2620	6.0	5.1	2910	Field sample no.kd8
331960	61	195	85500	23	-10	581	4.6	3.3	1880	location 302, chlorite altered volcanic with py veins + diseminations, dump sample
331961	54	500	84000	2590	-10	842	2.2	2.1	2670	location 302; dump sample; chlorite alt volc with 3% dissem + vein pyrite
331962	33	745	91000	3590	-10	725	2.7	4.2	4400	location 312, chlorite alt. q-phyric volcanic with 0.5% disseminated pyrite, host to 311961
331963	12	141	59500	3580	-10	2890	2.6	2.7	262	pyrite
331964	99	3920	140000	108	57	3140	3.5	10.1	5350	location 308, from trench, strong chlorite altered volcaniclastic with 3% Py + cpy veins
331965	24	41	55500	2620	-10	92	0.9	4.3	383	disseminated pyrite
331966	33	1620	144000	2840	-10	277	3.7	4.8	709	pyrite, host to 967 & 968
331967	229	150	104000	1040	-10	119	11.6	7.2	294	location 330, trench sample, strongly chlorite altered q-phyric volcanic with 5% vein pyrite
331968	323	258	100000	385	-10	478	11.9	5.1	126	location 330; trench sample; altered volcanic with 10% pyrite veins
331969	111	34	48500	2	-10	328	11.4	6.9	70	location 330, trench sample, oxidised silica-sericite-pyrite rock
331970	148	293	186000	1210	-10	143	16.9	1.3	341	location 330, py (10%) veined chlorite alt. volc
331971	19	35	34000	1590	-10	90	1.9	2.5	140	field sample kd6, weak chlorite-silica altered q-phyric volc with 0.5% dissem. pyrite